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ABSTRACT

This module is the first in a self-instructional program designed to train public school personnel in how to manage educational projects. These may include federally funded projects (such as Title I projects), court-ordered programs (such as a desegregation plan), or locally initiated projects (such as a new math program). The purpose of this module is to provide an orientation to project management for top-level administrators in local education agencies. In the first lesson, the characteristics of a project and of project management are explained, examples of project management are cited, and the advantages and limitations of project management in local education agencies are discussed. The second lesson presents the organizational placement of projects in local education agencies, the requirements for incorporating project management capability in local education agencies, and an outline plan for installing project management capability. In the third lesson, the guidance necessary in planning a project is identified, possible assistance required during project operations is cited, and potential sources of functional conflict are discussed. Additional information and assistance on project management are provided in the fourth lesson. Although the module is designed for use with a slide and tape presentation, it may be used alone. (Author/JM)

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EDUCATIONAL PROJECT MANAGEMENT INSTRUCTIONAL SYSTEM

EPMIS

MODULE ONE

PROJECT MANAGEMENT EXECUTIVE ORIENTATION

C. PETER CUMMINGS & DESMOND L. COOK

Administering for Change Program
Philadelphia, Pennsylvania 19103

and

Educational Program Management Center
The Ohio State University

May 1973

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Mr. Paul August, Charles McLean and Peter Stoycheff developed the major share of the original lesson materials and contributed to the design of the instructional package. Mike Ahren was most creative as illustrator and artist in the preparation of the original visual materials.

John Bowers served as a capable evaluator during the early tryout seminars. Charles McLean revised many of the original lessons and Bob Halenda and Kerry Pinkston revised much of the audiovisual materials. Susan Cahill and Sharon Ford did a fine job of typing draft and final copies of lesson materials and technical memorandums.

MODULE ONE

PROJECT MANAGEMENT EXECUTIVE ORIENTATION

Module Manual

Project Management Component
Administering for Change Program
Research for Better Schools, Inc.
1700 Market Street
Philadelphia, Pennsylvania 19103
May 1973

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INTRODUCTION

American education in the past decade has been characterized by the increasing educational effort of the federal government. Recent commissions on national goals have usually included a list of goals in education. For example, in the report of President Eisenhower's Commission on National Goals presented in 1960 the education goals were rigorously defined in such a way that the federal government was to be a partner in the public education effort. To meet this requirement, federal legislation has been passed to form a series of federal education acts.

Concurrent with the federal activity in public education there have been groups of educators who were aware of difficulties within their area of specialty and created programs to improve public education. An example is the School Mathematics Study Group (SMSG), a project funded by the National Science Foundation, which worked on the improvement of the whole mathematics curriculum for the purpose of improving the mathematics knowledge for the widest possible group of students.

Many other groups of professionals in education have been aware of the wide gap between what is and what could be achieved in education in our public schools. These groups have continued to express their collective concern on a larger audience. They have recognized the following:

There are stated goals for public education.

There is a rather good possibility for goal achievement.

There exists a difference between the actual and the possible in education.

There are limited resources available for a local school agency to materially reduce the difference.

> There exists the possibility of applying a well developed solution for one local school agency to similar difficulties in other school agencies.

The stated concerns of these groups of educators have found their way to foundations and to concerned public officials in the state and federal government. Goal setting at the federal level and the work done by education groups at lower levels has resulted in federal legislation to provide the funds to work toward the solution of the recognized educational problems. As a result, project proposals, experimentation, and curriculum revision groups have been founded. The event of the launching of the Russian Sputnik and the criticisms of influential persons, Admiral Rickover for one, have added a sense of urgency to the effort.

There is a need for elements of management discipline in the local schools. Because public funds are involved and accountability is necessary in dealing with public funds, the problem of designing, administering and evaluating a federal, state, or locally funded project becomes a concern at federal, state, and local educational levels. In this regard the role of educational project manager needs to be defined and a group of people need to become experienced in this role. Because of the increasing number of projects in education, the expanding nature of projects now in existence, and rising cost of the total effort, competent educational project managers need to be recruited and trained in the role.

The need for a more comprehensive approach to planning and controlling projects in the educational environment is established by the observation that this type of activity in education is: (a) becoming both more complex and larger, (b) calling for greater allocations of money, and (c) continuing for longer periods of time. The concept of project management as a dis-

cipline is just making its debut in the educational environment. The discipline has gronw out of military and industrial needs and is barely fifteen years old.

In order to help meet the need for public school personnel trained in project management, Research for Better Schools, Inc. of Philadelphia, Pennsylvania has developed self-instructional materials in the area of educational project management. These materials are described below.

1. Executive Orientation. This module is designed to introduct top-level administration to the concepts of project, management, and project management. Topics such as the advantages and limitations of project management and the requirements and organization of a project management system in a local education agency (LEA) are emphasized.

2. Basic Principles and Techniques of Project Management. This module is designed for acting or potential project directors in a local school district and covers the four major phases of project management: project planning, implementation, monitoring and control, and termination.

3. Proposal Development. This module is designed to assist local school district personnel in the development of project proposals and covers such topics as translating an idea into a proposal, proposal formats, and application procedures for funding and contractual arrangements.

4. Case Simulation on Project Management. This package is designed for use either independently or in conjunction with the Basic Principles and Techniques of Project Management module.

If you desire more information regarding these materials, write to:

Research for Better Schools, Inc.
Suite 1700
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GOALS

The purpose of this module is to provide an orientation to project management for top-level administrators in local education agencies. The goals of the module are:

1. to provide top-level administrators with basic knowledge of the project management process.
2. to inform top-level administrators of the benefits of the project management approach for a local school district.
3. to acquaint top-level administrators with the kind of support and assistance that they and functional departments need to provide the project manager and the on-going project operations.
4. to inform top-level administrators where additional information and assistance regarding project management and its implementation into local education agencies may be found.

LESSON CONTENT

The goals of this module are accomplished by means of four lessons entitled Building Conviction, Organizational Structuring, The Life Cycle of a Project, and Securing More Information. In lesson one the characteristics of a project and project management are defined; examples of project management in the military, industry, government, and education are cited; and the advantages and limitations of project management in local education agencies are discussed. In lesson two the organizational placement of projects in local education agencies is presented, the requirements for incorporating project management capability in local education agencies

is discussed, and an outline plan for installing project management capability is presented. In lesson three the guidance necessary in planning a project is identified, possible assistance required during project operations is cited, and potential sources of functional conflict are discussed. In lesson four sources of additional information and assistance on project management are provided.

MODULE ELEMENTS

You should have received the following materials. Check to see that you have them before proceeding with the lessons.

A. Module manual for Module 1--Executive Orientation

B. Four lesson booklets entitled:

1. Building Conviction

2. Organizational Structuring

3. Developing an Awareness of Project Operations

4. Securing More Information

C. A set of color slides containing a group of slides for each of the four lessons identified above.

D. Four cassette tapes containing the narratives to accompany each of the lesson slide presentations.

You will need the following equipment in order to complete the lessons:

A. Cassette tape recorder

B. Carousel slide projector

C. Viewing screen

D. Pencil

E. Chalk board, chalk, and pointer, or overhead projector, clear overlays, and grease pencil (for use by groups of people completing the lessons concurrently--optional for individual completion of lessons).

EVALUATION SYSTEM

Various evaluation instruments are interspersed throughout this module manual and the four lessons. Together these instruments form an evaluation system whose purposes are to sensitize the learner, to provide the learner with a measure of his lesson entry level and knowledge gained from the lessons, and to provide the lesson material developers with valuable information for the revision and improvement of the lessons.

The "Student Information Form" provides the lesson materials developers with data to help identify the student population using the materials. This form is NOT used to identify individuals. The "Module 1--Pretest" sensitizes the learner, provides him with a measure of his entry level, and serves as a basis for estimating the knowledge gained by the learner from completing the entire set of lessons. The "Module 1--Post-Test" provides the learner with a measure of his post-module achievement level and provides a basis for estimating the knowledge gained by the learner from completing Module 1. The "Lesson Quality Control Forms" found in the lessons provide information to the lesson materials developers necessary for the revision and improvement of specific lessons in the Module. The "Module 1--Quality Control Form" provides information for the revision and improvement of the module as a whole. Your careful consideration in completing the evaluation system forms will be greatly appreciated.

STUDENT FLOW

The purpose of this section is to present the path of student flow or passage through the instructional module. To help clarify this, a flow chart reflecting how you should work through the instructional materials is presented on page eight (8) as Figure 1. A brief description of the sections associated with the numbered rectangels in Figure 1 is given below.

1.1 Introduction--sets the instructional module in the educational setting.

1.2 Goals--presents you with the instructional goals of the module.

1.3 Lesson Content--briefly describes the content of the four lessons.

1.4 Module Elements--briefly describes the elements or components of the entire instructional module.

1.5 Evaluation System--identifies the various evaluation instruments of the module and indicates the purpose of each.

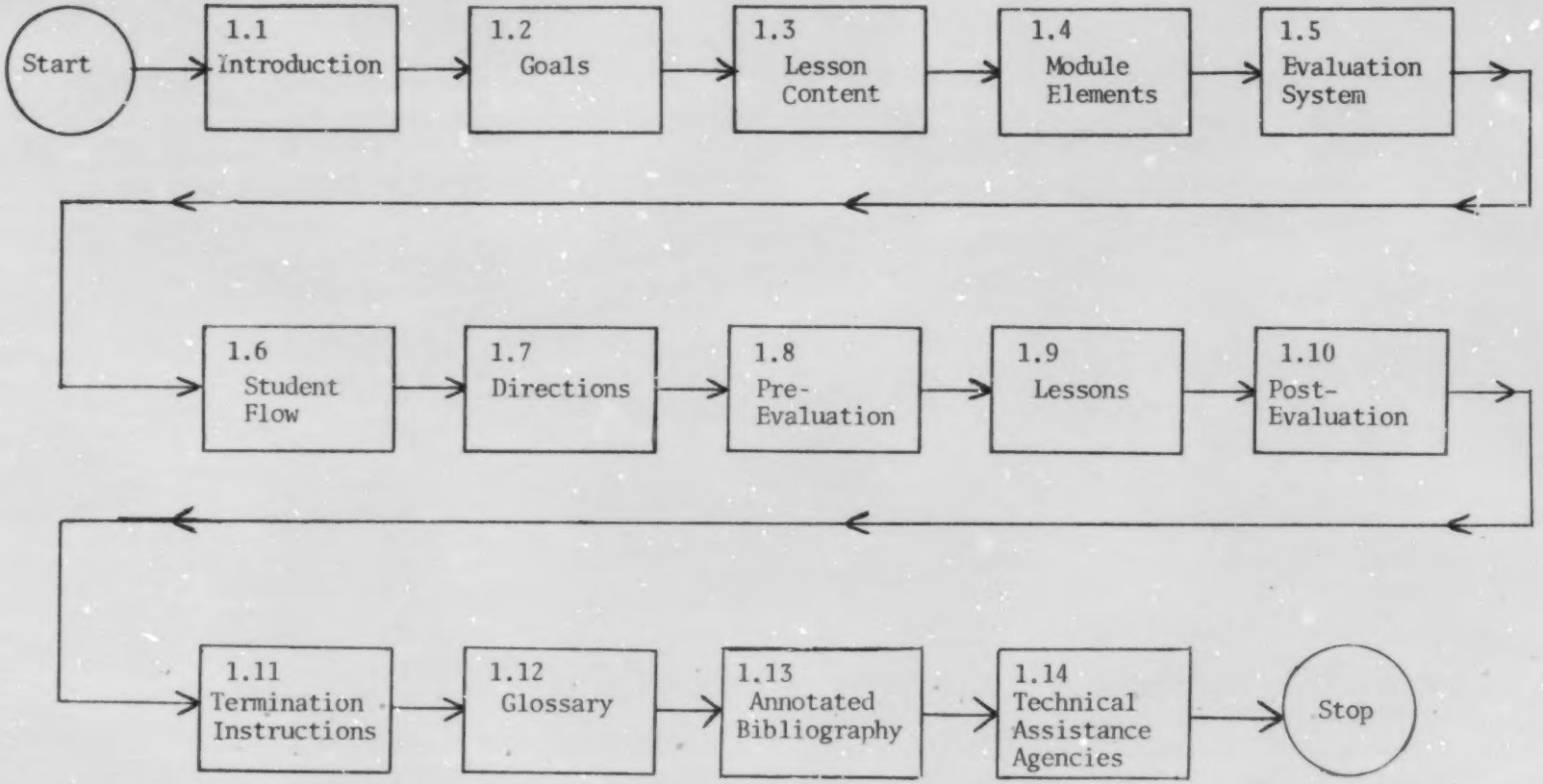

Figure 1. Student Flow Chart

1.6 Student Flow--illustrates and describes the path you should follow in working through this instructional module.

1.7 Directions--gives directions or recommendations regarding how both individuals and groups can make effective use of these instructional materials.

1.8 Pre-Evaluation--consists of the Student Information Form and the Module 1--Pretest that you should complete prior to beginning the lessons.

1.9 Lessons--consist of the four lessons entitled Building Conviction, Organizational Structuring, Developing an Awareness of Project Operations, and Securing More Information which you should complete sequentially.

1.10 Post-Evaluation--consists of the Module 1--Quality Control Form and Module--Post-Test that you should complete after lesson number four.

1.11 Termination Instructions--provides you with directions for disposing of the lesson materials and mailing the Student Information Form, Lesson Quality Control Forms, and Module 1--Quality Control Form back to the instructional materials developers.

1.12 Glossary--consists of a glossary of terms relevant to educational project management which is included for your reference.

1.13 Annotated Bibliography--consists of an annotation of six primary references in the area of project management which is included for your reference.

1.14 Assistance Agencies--identifies nine agencies to which you may want to write for additional information or assistance regarding project management and its implementation.

DIRECTIONS

This instructional module is designed to be self-instructional. That is, an individual learner can work through the materials independent of anyone else. However, these instructional materials can be adapted for use by a group of learners. If you use these materials in a group setting, it is suggested that you follow the recommendations below.

1. Provide each learner with a module manual and four lesson booklets.
2. Have each learner read and complete the Module Manual and the introductory sections of each lesson.

3. Bring the group of learners together for the slide-tape presentation of each lesson.

4. Lead the group or appoint someone to lead them in the discussion of the discussion questions immediately following the end of the slide-tape presentation. The discussion questions appear in the lesson booklets after the lesson narrative. The group leader may find it desirable to summarize discussion points on a chalk board or screen with an overhead projector as the group attempts to obtain consensus of opinion on the questions.

5. At the conclusion of the group discussion, direct everyone to complete the Lesson Quality Control Form in their lesson booklet before proceeding to the next lesson.

6. Follow the Lesson and Module Termination Instructions and mail the blue Student Information Form, Lesson Quality Control Forms, and Module Quality Control Form as a group.

It is intended that the content of each lesson be presented with slides and tapes regardless of whether the module is used independently by an individual learner or by a group of learners. It is possible, however, for you to choose one of the following options for receiving lesson content.

1. Read the lesson narrative included in each lesson booklet.

2. Listen to the lesson tape.

3. Read the lesson narrative and listen to the tape simultaneously.

4. Read the lesson narrative and view the slide presentation together.

5. Read the lesson narrative, listen to the tape, and view the slide presentation together.

If you choose one of these alternatives, be careful when following the lesson directions and be sure to complete all of the lesson materials. The lesson directions are written with the assumption that you have chosen the preferred slide-tape presentation mode for receiving lesson content.

Turn the page and complete the Student Information Form.

Module 1--Student Information Form

Directions: Please take time to carefully answer the items below. Write the last four digits of your Social Security number on the line below so that the pages can be identified in the event they become separated____.

Thank you for your assistance.

1. What is the title of your present position? (If graduate student, indicate most recent full-time position).

_____

2. List three primary duties of your present position? (If graduate student, indicate duties of most recent position).

a.

b.

c.

3. Have you completed any formal courses in management or project management?

☐ Yes ☐ No

4. If yes, briefly describe the content of these courses.

_____

_____

_____

_____

_____

_____

5. Have you had any previous practical experience utilizing project management techniques? (For example, in federally funded projects)

_____No such experience
_____Yes, have managed projects myself
_____Yes, have worked on projects which used it.
_____Other (Describe)

_____

_____

Fill in the last four digits of your Social Security number _____.

6. How long have you been associated with these projects?

☐ Less than 2 years ☐ 6-9 years

☐ 3-5 years ☐ 10 years or more

Turn the page and complete the pretest.

Module 1--Pretest

Directions: Below are listed eleven behavioral objectives for this instructional module. For each of the objectives listed, circle the response at the right which best represents your estimation of your ability to perform that task at this moment. Use the following key in marking your responses.

1 = I can accomplish this task very well.
2 = I can accomplish this fairly well.
3 = I probably could not do this adequately.
4 = I could not do this at all.

No.	Objectives	Responses
1	Define the concepts of project and project management.	1 2 3 4
2	State the relationship of general management principles to project management.	1 2 3 4
3	Cite examples of how the project management system can be and has been used successfully in industry and government.	1 2 3 4
4	Cite examples of how the project management system can be and has been used successfully in the field of education.	1 2 3 4
5	State important advantages and limitations of using a project management approach.	1 2 3 4
6	State where project management as a discipline can assist in local education agency (LEA) operations.	1 2 3 4
7	Create a plan for implementing a project management system into at least one aspect of a given LEA situation.	1 2 3 4
8	Cite the specific information and guidance input needed to aid the project director in the planning and operation of a project.	1 2 3 4
9	Cite potential conflicts existing between the LEA structure and project activity which crosses function organizational lines.	1 2 3 4

No.	Objectives	Responses
10	State the support and assistance which could aid the project director in solving potential conflict.	1 2 3 4
11	State locations where information and help is available for assistance in project management.	1 2 3 4

Directions: You are now ready to begin the four lessons of the Executive Orientation Module. Find the first lesson, Building Conviction, and begin reading the introductory sections.

Module 1--Post-Test

Directions: Listed below are the eleven objectives of this instructional module. At the beginning of the lessons, you were asked to estimate your ability to perform each. Now you are to make two estimations: First, re-estimate your ability to perform each task before completing this instructional module, i.e., indicate how you now view your pre-instruction abilities. Second, circle the response that represents your estimation of your ability to perform that task now, after completing the instructional module. Use the following key:

1 = I can accomplish this task very well.
2 = I can accomplish this fairly well.
3 = I probably could not do this adequately.
4 = I could not do this at all.

No.	Objectives	Responses Before Instruction				After Instruction			
1	Define the concepts of project and project management.	1	2	3	4	1	2	3	4
2	State the relationship of general management principles to project management.	1	2	3	4	1	2	3	4
3	Cite examples of how the project management system can be and has been used successfully in industry and government.	1	2	3	4	1	2	3	4
4	Cite examples of how the project management system can be and has been used successfully in the field of education.	1	2	3	4	1	2	3	4
5	State important advantages and limitations of using a project management approach.	1	2	3	4	1	2	3	4
6	State where project management as a discipline can assist in local education agency (LEA) operations.	1	2	3	4	1	2	3	4
7	Create a plan for implementing a project management system into at least one aspect of a given LEA operation.	1	2	3	4	1	2	3	4
8	Cite the specific information and guidance input needed to aid the project director in the planning and operation of a project.	1	2	3	4	1	2	3	4

No.	Objectives	Responses Before Instruction				After Instruction			
9	Cite potential conflicts existing between the LEA structure and project activity which crosses function organizational lines.	1	2	3	4	1	2	3	4
10	State the support and assistance which could aid the project director in solving potential conflict.	1	2	3	4	1	2	3	4
11	State locations where information and help is available for assistance in project management.	1	2	3	4	1	2	3	4

Turn the page and complete the Quality Control Form.

Module 1--Quality Control Form

Directions: Please take time to carefully answer the items below. Be as specific and thorough as you can in providing comments and suggestions for revising and improving the module.

Please write the last four digits of your Social Security number on the line below so that the pages can be identified in the event they become separated_____.

Thank you for you assistance.

1. Indicate your overall impression of the quality of this module?

☐ Excellent ☐ Very good ☐ good ☐ Fair ☐ Poor

2. What is the most positive aspect of this module?

_____

_____

_____

3. What is the most negative aspect of this module?

_____

_____

_____

4. What suggestions do you have for correcting or improving this negative aspect?

_____

_____

_____

5. How well are the lessons organized and sequenced?

☐ Excellently ☐ Very well ☐ well ☐ Fairly well ☐ Poorly

*Fill in the last four digits of your Social Security number*_____.

6. How difficult is the module?

☐ Very difficult ☐ Difficult

☐ Moderately difficult ☐ Somewhat difficult

☐ Rather easy

7. What is your impression of the quality of the module manual?

☐ Excellent ☐ Very good ☐ Good ☐ Fair ☐ Poor

8. For how many lessons did you view the slide/tape presentation?

☐ None ☐ 1 ☐ 2 ☐ 3 ☐ 4

9. Indicate how helpful the slide/tape presentations were in the instructional process for the lessons that you viewed them?

☐ Extremely helpful ☐ Quite helpful

☐ Very helpful ☐ Somewhat helpful

☐ Not helpful

Turn the page and follow the Termination Instructions.

Module 1--Termination Instructions

Upon completion of the Module 1--Quality Control Form please:

1. *Tear out the blue Student Information Form, Module 1--Quality Control Form, and the four Lesson Quality Control Forms and staple them together (one packet of forms for each student).*
2. *Place the forms in the special envelope provided.*
3. *Mail the envelope to:* *Research for Better Schools, Inc.*
   Suite 1700
   1700 Market Street
   Philadelphia, Pennsylvania 19103

You have now completed the Executive Orientation Module of the Educational Project Management Instruction System. If you desire more information about the system, turn to page three of the Module Manual and/or write to the address shown above.

Module 1--A Selected Glossary of Project Management Related Concepts

ACTION, ALTERNATE COURSE OF (ALTERNATIVE) -

A proposed management action that may be selected for implementation to correct a deviation.

ACTION, CORRECTIVE -

Management action that can be implemented to correct the cause of a deviation.

ACTION, ADAPTIVE -

Management action that can be implemented to minimize the effect of a course of action if the cause cannot be corrected.

ADMINISTRATION -

A process involving the execution of management decisions within an organizational framework utilizing pre-established rules for decision-making.

ANALYSIS -

The process of breaking a total into its constituent parts and examining these parts to determine their nature, proportion, function, and interrelationships.

ANALYSIS, POTENTIAL PROBLEM -

The analysis of problems that may occur when a selected course of action is implemented. It involves identifying potential problems, determining their possible cause and the probability of its occurrence, determining the action to prevent the cause or to minimize its effect, and developing a procedure for handling the most serious problems if they occur.

AUTHORITY -

The right to act, to make decisions, or to command others.

BUDGET -

The expression in financial terms of management plans for funding a project over a specific time period.

CASE-SIMULATION -

An exercise developed from or expressing an actual condition which is used to illustrate, practice, or reinforce learned principles and skills.

CONSEQUENCES -

The negative effects of implementing a given course of action. They should be identified and the probability of their occurrence should be determined before fully accepting a given course of action.

CONTROL -

Basically a problem-solving process involving three steps--problem identification, problem solution and solution implementation; in project management terms, deviation identification and analysis, decision-making through alternative creation, and selection and alternative implementation.

COSTING UNIT (OR COST CENTER) -

A unit of work, usually a work package or a specific function or task, around which various costs are accumulated.

CRITICAL PATH -

The longest or most time consuming pathway within a network of various paths relating the activities required between the start and finish of the project.

DECISION BOX -

A condition or point in a process where a choice is to be made between two or more alternatives.

DECISION, GO/NO GO -

The process utilized for accepting or requesting an alternative course of action for consideration if it satisfies and does not satisfy the "needs" respectively.

DECISION-MAKING -

Identifying and selecting from possible alternative courses of action the best possible course of action.

DETERMINISTIC SYSTEM -

The interaction of the components of this kind of system can be predicted without risk of error if the facts or information which the system is required to handle are known. The outcome of a deterministic

system is determined exclusively by the values of the input and the fixed process.

DEVIATION -

A difference between a planned situation and an actual situation, a project management problem.

DEVIATION, CAUSE OF -

The unplanned or unanticipated change in the project that will yield a deviation. The effect of a cause is a deviation.

DIRECTING -

Primarily a process of motivating employees to accomplish their tasks. It requires the establishment of an environment conducive to accomplishing effort.

DIRECT COSTS -

Costs for those resources obtained especially for the activity or project tasks and necessary for its completion.

ENDS (RESULTS AND RESOURCES) -

The first consideration and the objectives in decision-making. The specification of what one wants to accomplish and the identification of the resources that are to be utilized.

EVENT -

A definable point in time where some action or activity begins or ends. It is a recognizable instant in time which does not consume time or resources. Usually identified in network management systems by a circle.

EVENT-ORIENTED DIAGRAM -

A chart which visually shows the interrelatedness and sequence of the various activities or tasks necessary to the completion of a project where the fact of start or finish of an activity is identified by using a circle.

EXCEPTION PRINCIPLE -

Control by identifying only significant deviations at specified points between "what is" and "what should be" or planned.

EXPENDITURE PLAN -

A set of planned decisions concerned with financial outflow and answering questions such as:

What is to be purchased?
When is the item to be ordered?
Where is the item to be purchased?
What weekly or monthly rate is to be used for the item?
How is the item to be purchased?

GANTT CHART OR TASK-EVENT CALENDAR -

A tool for planning work and relating activities to time or schedule. In a GANTT Chart, the horizontal axis represents time and the vertical axis lists tasks or activities to be accomplished.

GEAR-UP PHASE -

The activities involved in the period after approval of the proposal and before the project operational activity phase. Consists of bringing together resources necessary to start the project operational phase, and identifying and establishing policy and procedures, and creating the project information system.

GOAL -

A broadly stated end point to be reached in the future. In the project, a goal is a collective activity, identified as the end product, and is at the top level of hierarchial work breakdown structure.

GOAL ORIENTED -

Activity that is aimed toward some defined goal or end product.

HANDBOOK, PROJECT -

A formal or informal document containing basic information about project goals and tasks, policy statements and procedures guidelines, organizational relationships, and similar items for use by project manager and personnel in day-to-day operations of the project.

HIERARCHIAL APPROACH -

A ranging of systems by complexity from general to elementary with the result that a hierarchial diagram of the systems and subsystems resembles a "tree".

A ranging of objectives from broad to specific, with the assumption that accomplishment of specified objectives will contribute to the attainment of the next higher objective in the hierarchy.

HISTORY, PROJECT -

Optional informal report at end of project which reviews and summarizes the major action of the project.

INDIRECT COSTS -

Costs accounted to a project which are often pro-rated since they cannot be adequately identified with a costing unit. Examples are heat, electricity, and other genqral facilities which are shared with the organization in which the project is housed.

LEAD TIME -

The time between the procurement or order of a resource and its need or use in the accomplishment of an activity.

"LIKES" -

Those ends or decision-making objectives that are desirable features that alternative courses of action may satisfy to some degree. They are not absolutely necessary and can be ranked or weighed to establish their desirability.

LIMITS -

The allowable tolerance for acceptability of the standards specified for time, cost and performance at project control points. Limits may be either positive or negative or both with respect to the standard set.

MANAGEMENT -

The method of attaining organizational goals by 1) developing a plan; 2) arranging operations in conformity to the plan; and 3) creating an environment which is favorable to the performances of the people belonging to the organization. It is a process which involves a high degree of uncertainty and unprogrammed decision-making.

MEMORANDUM, CHANGE -

A structured document utilizing project planning thinking to aid in implementing a selected course of action and changes to the project.

MILESTONES (MILESTONE EVENTS) -

Important events identified in the work flow of a project such that if not completed on time the project goal will not be attained on schedule or possibly not achieved at all.

MISSION -

A mission is composed of several tasks and is itself a sub-goal. A mission is focused activity, or package of work, using a limited amount of project resources and staff at the middle level in the hierarchial work breakdown structure.

MOST LIKELY TIME -

The estimated average time needed to complete an activity based upon some experience with a similar activity.

"NEEDS" -

Those ends or decision-making objectives that must absolutely be satisfied by any acceptable course of action.

NETWORK (FLOW DIAGRAM OR WORK FLOW) -

Consists of interrelated activities and events which must be accomplished to reach the project goal. The flow diagram shows the planned sequences of accomplishment, interdependencies, and interrelationships of activities and events.

NOMINAL (CODING) -

A classification of some entity into well-defined physical categories where numerical attributes and order are not important to the classification.

OBJECTIVE(S) -

Statements which specify a desired outcome. The statement can be one which includes a braod area of concern or need or it can specify an extremely narrow concern. Goal, mission, and task statements attempt to redefine objectives depending on the extent of concern from broad to narrow.

OPTIMISTIC TIME -

The time estimated for the completion of an activity when it is assumed that everything will go extremely well.

ORGANIZING -

The establishment of an integrated system of authority and responsibility relationships in which the members know what their tasks are and how they fit into the scheme and have the requisite authority and responsibility to accomplish these tasks.

PHASE-OUT -

Closing out the project when the objective or end product is realized or accomplished.

PLAN, IMPLEMENTATION -

A structured document to aid the project manager to implement a selected course of action.

PLANNING -

A process of determining objectives, defining and evaluating alternative courses of action, and selecting the course which will most effectively and efficiently achieve the established objectives.

POINT, PROCESS CONTROL -

A monitoring point, calendar date, dollars allocated, and performance standard, in the operational process of the project where one can conveniently determine deviations to control the process.

PROGRAM EVALUATION AND REVIEW TECHNIQUE (PERT) -

A management system for planning and controlling many activities related to the accomplishment of an objective in a once-through effort.

PESSIMISTIC TIME -

The time estimated for the completion of an activity when it is assumed there will be difficulty, the task is uncertain, or there is unfamiliarity with the task.

POLICY -

A policy is a general statement or rule which guides or channels thinking in decision-making. It can be formally stated or a result or practice over time.

PRINCIPLE OF EXCEPTION (SEE ALSO EXCEPTION PRINCIPLE) -

Principle of management by exception is a method of management control by which only those events and/or activities significantly deviating from plan are brought to the attention of the manager for action.

PROBABILISTIC SYSTEM -

Uses statistical analysis of past behavior to predict future behavior. Less certain predictions than that of a deterministic system. However, more systems can be described in probabilistic terms than in deterministic ones.

PROBLEM -

Deviation from a plan or a variance between what is and what is desired.

PROBLEM ANALYSIS -

The process of identifying and defining a deviation from plan and determining its specific cause.

PROCEDURE -

Guide to routine actions emphasizing a chronological sequence. Practices which are so re-current and routine as to lend themselves to formalized response.

PROGRAM -

A complex of policies, procedures, rules, tasks, resources, and associated elements necessary to carry out a given course of action.

PROGRAMMED DECISION -

Decisions which are basically repetitive, routine and procedural and where the decision rule is pre-determined.

PROJECT -

A set of interrelated and interdependent tasks that have to be accomplished to reach an objective or objectives within time, cost, and performance specifications and possessing a degree of uncertainty of how to achieve the goal.

PROJECT INFORMATION BASE -

A management information system consisting of planned cost, schedule, performance data used to compare against actuals.

PROJECT DEFINITION -

A process which involves the development of explicit statement of the project's primary objective goal and the necessary sub-objectives to reach the major goal. The development of a work breakdown structure is used as one technique in defining the project.

PROJECT MANAGER -

The one individual who is responsible for the successful accomplishment of a project.

PROJECT MANAGEMENT PHASES -

- Planning
- Gear-up/Implementation
- Operational Control
- Termination

ORGANIZATIONAL CHART -

Subdivision of major functions into smaller supporting functions with a delineation of specific responsibilities and authority for or at each level.

PROJECT TRANSITION -

The termination of the project where the results are phased into operational use or into another project.

REPORT, FINAL -

A formal report, usually required by the contractor, which documents the efforts of the project in accomplishing its goals and objectives.

REPORT, PROGRESS -

A report describing the progress of project utilizing the project plan to indicate events and activities completed, to describe the activities in progress and to reconsider the events and activities in the future.

REPORT, STATUS -

A report that indicates the current status of the project so that one can compare it to the project plan.

REPORT, TOP MANAGEMENT -

A report to top management for information on problem solution in the projects containing the following items: description of the deviation, cause of the deviation, two or three alternative courses of action, selected course of action, reasons for selection, and the action implementation plan.

RESOURCE ALLOCATION -

Translating an approved plan into a schedule by assigning resources to accomplish the planned activities during a specific calendar period. The process of applying resources toward the accomplishment of a plan, procedure, policy, tactic, or strategy.

RESOURCE COMMONALITY TABLE -

A shopping list prepared to identify the total required resources for an activity after the resources had been leveled. It contains the following column headings:

1) Resource item description
2) Quantity required after leveling
3) The lead time required to obtain the resource
4) The order date for procuring the resource

RESOURCE LEVELING PROCESS -

A process that deals with efficient resource allocations by adjusting the time for scheduling some activity such that a unit of

resource (manpower, equipment, or material) can be shared with other scheduled activity so as to permit the purchasing of fewer units of that resource item.

RESPONSIBILITY -

The obligation to use granted authority to direct that effort which is necessary to be performed according to plan.

SCHEDULING -

The translation of the plan into a time table showing the specific calendar dates for the start and completion of work.

SCORE, SATISFYING OR FITTING -

The score given to an alternative on how well it satisfies or fits a given "like".

SEQUENCE DIAGRAM -

Used to illustrate the interrelationship of activities or events to achieve a goal. The logic used in developing such a work flow sequence is antecedent-consequent logic where one activity or event is related to another by time.

SLACK PATH -

A pathway thorugh a network along which actual activity is occurring and requires less time to complete than the most time consuming or critical path.

STANDARDS -

The specification set for time, cost and performance at control points. If they are met then the project is proceeding according to plan.

SYSTEM -

An entity, conceptual or physical, which consists of interrelated or interacting parts directed toward some overall goal or purpose. For management, a logical arrangement of interdependent and interrelated parts into a connected whole to accomplish a specified objective.

SYSTEMS ANALYSIS -

The process of breaking the system down into its interrelated parts. In project definition it is an orderly approach for defining a set of objectives or goals, for analyzing and describing a given organization structure using significant factors and communications,

and then determining what arrangements of factors and communications will achieve the desired effect.

SYSTEM, PROJECT MANAGEMENT INFORMATION -

A system that stores and provides management information for porject decision-making utilizing the project plan and the project reporting system.

SYSTEM, REPORTING -

A system of transmitting information utilizing reports so that the actual project situation can be compared to the planned project situation.

TASK -

A task, or in some cases a sub-task, is the smallest unit of action. A task is a single activity or an element of a work package which uses a single person of the staff and little resources and is at the lowest level of hierarchial work breakdown structure.

TASK-EVENT CALENDAR (SEE GANTT CHART)

TASK RESOURCE SCHEDULE -

A tool or device which is used to identify, estimate quantity, and schedule the resources which support a specific task.

TERMINATION -

Stopping of effort due to a lack of funds, failure to meet contract conditions, or similar reason, before project objectives reached.

TRANSITION -

Institutionalizing the end product of a project or absorbing the effort into an existing organizational unit.

UNPROGRAMMED DECISIONS -

Decisions which deal with unstructured, novel and consequential issues and for which there are no pre-determined rules.

WORK PACKAGE -

A specific job to be accomplished which is usually within the responsibility of one operating unit in an organization and makes up one item on the work breakdown structure.

Module 1--Annotated Bibliography

Ackoff, Russell. A Concept of Corporate Planning. New York: Interscience Publishers, Inc., 1970.

Although written primarily for the business executive, the basic concepts of planning, controlling, information theory, and organizational theory presented are invaluable to any person charged with the responsibility of accomplishing objectives within an organization.

Anthony, Robert. Planning and Controlling Systems. Cambridge, Mass.: Harvard University, Division of Research Graduate School of Business Administration, 1965.

An easily read and short resume of the basic concepts of planning and controlling and how they can be utilized to develop management systems for most situations. Highly recommended as a basic reference for reading in the planned change area.

Archibald, Russell and Villoria, Richard. Network-Based Management Systems. New York: John Wiley and Sons, 1967.

A detailed description of the application of PERT and CPM to various situations. Covers the basic elements of network system, including reporting procedures. Case applications are provided.

Avots, Ivars. "Why Does Project Management Fail?" California Management Review, XII, No. 1 (Fall, 1969), 77-82.

The author outlines symptoms for and six reasons as to why project management fails when an organization attempts to implement the concept. Ten suggestions are provided which will help to insure that the implementation of project management concepts will take place successfully.

Cook, Desmond L. PERT: Applications to Education. Washington, D. C.: Office of Education Monograph No. 17, U. S. Government Printing Office, 1966.

This monograph outlines the basic principles of the PERT System for managing research and development projects. Applications to various types of educational projects along with suggestions for implementation are provided.

Cook, Desmond L. Educational Project Management. Columbus, Ohio: Charles E. Merrill Company, 1971

An introductory text in three parts on the application of the project management concept to the field of education. The first part presents basic management foundations. The second part presents a detailed discussion of the PACT, a project management model. The third part deals with implementation of project management in an organizational situation.

Module 1--Technical Assistance Agencies

1. RESEARCH FOR BETTER SCHOOLS, INC.
   Suite 1700
   1700 Market Street
   Philadelphia, Pennsylvania 19103

2. THE UNIVERSITY COUNCIL ON EDUCATIONAL ADMINISTRATION
   The Ohio State University
   315 Ramseyer Hall
   29 West Woodruff Avenue
   Columbus, Ohio 43210

3. NATIONAL ACADEMY FOR SCHOOL EXECUTIVES
   1201 16th Street, N. W.
   Washington, D.C. 20030

4. EDUCATIONAL PROGRAM MANAGEMENT CENTER
   College of Education
   The Ohio State University
   216 Ramseyer Hall
   29 West Woodruff Avenue
   Columbus, Ohio 43210

5. PROJECT MANAGEMENT INSTITUTE
   P. O. Box 43
   Drexel Hill, Pennsylvania 19026

6. EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)
   U. S. Office of Education
   400 Maryland Avenue, S.W.
   Washington, D. C. 20202

7. AMERICAN MANAGEMENT ASSOCIATION
   135 West 50th Street
   New York, New York 10020

MODULE ONE

PROJECT MANAGEMENT EXECUTIVE ORIENTATION

Lesson 1 -- Building Conviction

Project Management Component
Administering for Change Program
Research for Better Schools, Inc.
1700 Market Street
Philadelphia, Pennsylvania 19103
May 1973

Lesson 1--Building Conviction

Introduction to Lesson

This lesson contains the following items. Make sure that each item is present before starting to work through the lesson.

Page

A. Booklet for Executive Orientation

Overview and objectives 1.2
Lesson abstract and content outline 1.3
Lesson text 1.7
Discussion questions 1.15
Lesson Quality Control Form 1.16

B. Set of Color Slides entitled "Module 1--Executive Orientation, Lesson 1--Building Conviction."

C. Cassette Tape entitled "Module 1--Executive Orientation, Lesson 1--Building Conviction."

EQUIPMENT NEEDED. The following equipment will be required for this lesson and you are advised to arrange for their use:

cassette tape recorder
carousel slide projector
projection screen

TIME REQUIRED. The tape-slide presentation runs approximately 17 minutes. The total time needed to complete the lesson depends upon the amount of time spent on the questions provided at the end of the lesson. It is suggested that you allow approximately 10 minutes for each question. Also, an additional 15 minutes may be required to read and complete the other parts of the lesson.

Turn the page and read the Overview and Objectives.

Lesson 1--Building Conviction

Overview and Objectives

OVERVIEW

In this lesson the learner is introduced to the concepts of "project" and "project management." The advantages and limitations of the use of project management are discussed, and successful uses of project management in industry, government, and education are cited. Emphasis is placed upon the ways that project management can assist the local education agency (LEA). In the succeeding lesson the steps necessary for installing project management in an LEA are specified.

OBJECTIVES

1. The student should be able to define the concepts of "project" and "project management."

2. The student should be able to cite examples of how project management can and has been used successfully in industry and government.

3. The student should be able to cite examples of how project management can and has been used successfully in the field of education.

4. The student should be able to state examples of LEA effort which could be identified as projects.

5. The student should be able to state the important advantages for and limitations of using a project-type management system.

6. The student should be able to state where project management as a discipline can assist in LEA operations.

Turn the page and read the Lesson Abstract and Content Outline.

Lesson 1--Building Conviction

Lesson Abstract and Content Outline

ABSTRACT

A project is a unique goal-oriented activity which delivers a definable end product within time, cost, and performance specifications. Projects have project managers who perform duties and make decisions in the four phases of project management--planning, preparation, operational control, and termination. Often, school operations can be restructured such that some activities can be treated as projects, while other school activities may already be projects. Project management can result directly in a higher probability of accomplishing goals and better knowledge of costs related to goals, and indirectly in improved school community relations.

CONTENT OUTLINE

A. The goal of this course is to orient the learner to project management and project management capability.

B. Introduction to the training module

   1. The characterizations which coordinate the written material with the illustrations are introduced.

   2. The general nature of the other lessons in the module is presented.

C. Definition of a project

   1. Project is a unique goal-oriented activity which has uncertainty about the path leading to the goal and which delivers some definable end product within time, cost and performance specifications.

   2. Activities in the schools which are not projects are identified.

3. The following are examples of projects where a complex activity was managed and where the project goal was realized.

   a. Polaris missile project and Program Evaluation and Review Techniques (PERT) development.
   b. Apollo space project
   c. World fair sites, expositions, and Disneyland
   d. Chevrolet's Vega product development project
   e. Familiar Title I projects under federal ESEA Bill of 1965
   f. Northern Virginia Technical College development project
   g. University of Toledo teacher program development project
   h. Numerous school building construction projects.

D. Management of projects in a local school agency

1. Description of project management

   a. Projects have project managers who perform project duties such as planning, integrating, evaluating, implementing and making decisions. Project managers' skills include goal setting, planning, time estimating, scheduling, resource allocating, budgeting, directing, and controlling.

   b. The four phases of project management are:
      - Planning
      - Implementation
      - Operational control
      - Termination or transition

2. School operations can be restructured such that some activities could be treated as projects once the rationale for doing the restructuring is justified. Such a restructuring results in the following:

   a. Forces the local school district to ask: What it wants, how to accomplish, what possible levels of performance, what items not desired, what milestones, and what is to be delivered.

   b. Yields an examination of elements of the school program as related to goals, on sequenced plans, on resource allocation plans, and on orderly-timely control of activity by comparison to plans.

   c. Higher probability of accomplishing goals.

   d. Better knowledge of costs related to goals.

   e. Leads to necessity for further delegation of authority and decision-making power.

f. Requires integration of both a functional and a project-type management system.

g. Demands the acquisition of well-qualified project managers exactly when needed.

h. Successful school operations across the various projects rests heavily upon ability level of project managers.

i. School activities could be described, managed, adjusted, and evaluated, using cost effectiveness measures if the total activity is separated into segments and treated as projects.

E. Public relations benefits when project management is used by LEA

1. Schools are receiving pressures from the community.

2. Reports to the community have not answered the serious questions being raised.

3. Conducting school operations by project segments would provide reports and information for answering the questions.

Turn the page and proceed

Lesson 1--Building Conviction

Instructions

1. *Set up the recorder, projector, and screen.*
2. *Place the carousel slide tray for this lesson onto the projector and advance the tray to the start of Executive Orientation--Lesson One.*
3. *Place the cassette tape for this lesson into the recorder and rewind to the rewind stop.*
4. *Start the recorder and advance the slides with the "change tone."*

Lesson 1--Building Conviction

Lesson Text

Introduction

The purpose of this module is to introduce you to project management and the benefits it can have for a local school district. This first lesson discusses the concepts of project and project management, the role of the project manager, and the advantages and disadvantages of adopting a project type of operation for certain school programs or activities.

Characteristics of a Project

What is a "project"? The concept of a project can be understood by examining some of its main characteristics. A project is an activity which is goal oriented, involves some uncertainty about the manner in which it will be accomplished, has a finite life span and a cost limit.

An activity that is goal oriented is one that is aimed toward some identifiable end-product or capability. The end-products, or capabilities, of projects are such that they can be defined in enough detail (performance specifications) to enable a participant in the project or an outside auditor to easily understand the desired outcome of the project and to evaluate the degree to which that outcome has been attained.

Uncertainty is a major characteristic of projects because they are usually a unique or once-through kind of effort, and often there is uncertainty about how the goal will be accomplished. The amount of uncertainty varies from project to project depending upon such factors as the uniqueness of the effort and the inherent complexity of the overall project task. Staff inexperience may also result in uncertainty.

Having a finite life span means that an activity possesses a beginning and an end. Thus, a project has specified start and completion dates and, consequently, can be thought of as a temporary effort. This aspect of projects has led many experts in the field of management to refer to projects as temporary systems in order to distinguish projects from non-projects. On-going activities which do not have specified start and completion dates are referred to as "functional" activities or "permanent systems."

The project goal must be achieved within a specified cost limit. Project efforts involve the use of resources such as time, people, facilities, materials, equipment and services. These resources are usually translated into dollar amounts in a budget document which specifies the project cost limit that is not to be exceeded.

Thus, to be a project, an activity must have the following characteristics: a specified goal to develop an end product or capability, some uncertainty about how the goal is to be achieved, start and completion dates, and a cost limit.

Various activities of an overall school program can be compared with each of the above-mentioned characteristics in order to identify which are projects and which are not. Such a comparison is presented in Figure 1.

Project Examples

Occasionally educators ask, "What is so desirable about a project-oriented approach to conducting our activities?" or "Has project management been successful?" There are many examples in government, industry and education where the project mode of operation has resulted in the successful completion of a complex goal. In most cases, the major factor contributing

Figure #1

Classification of Sample School Activities as Projects or Non-Projects

Activity Descriptions / Project Characteristics	Specified End Product or Capability	Performance Specifications	Uncertainty	Start and Completion Dates	Cost Limit
*Development of Plan for School Desegregation	Yes	Yes	Yes	Yes	Yes
School District Payroll Operation	Yes	Yes	No	No	Yes
*Implementation of New Math Program	Yes	Yes	Yes	Yes	Yes
*Construction of New Open-Space Elementary School	Yes	Yes	Yes	Yes	Yes
Twelfth Grade English Literature Program	Yes	Yes	No	No	Yes

* Classified as "projects" since they possess all of the necessary characteristics.

to the success of the goal has been the use of project management techniques.

For example, the Polaris missile program which placed deterrent missiles aboard submarines of the United States Navy was treated as a project. The project manager was given authority to select his staff and to cross functional lines of many government agencies in order to assemble resources. He and his project planning group further refined the goal, specified missions and tasks, developed a time schedule, reviewed and evaluated their efforts, and revised their original plans in order to achieve a complex goal.

Another example is the Apollo project, a part of the NASA Space Program. The late President Kennedy gave the project the goal of putting a man on the moon prior to 1970. The staff planned the various missions, established a time schedule, continually reviewed and evaluated their efforts, and modified their original plans in accomplishing the mandated goal.

An example of product development in industry is Chevrolet's Vega, a small car which entered the market in the model year 1970. A project manager obtained his staff from the parent company. This project team made plans, established a target date, set performance standards, reviewed and evaluated their efforts, and put the product on the market on schedule.

There are also examples of projects in the field of education. The most familiar educational examples resulted from the Elementary and Secondary Education Act of 1965. Specific sections, such as Title I or Title III, specify requirements for a project plan, periodic evaluation, and for reviewing and reporting project efforts. This act has made it possible for many school districts to obtain funds with which to plan and conduct pro-

jects with specific goals, for example, to provide remedial and dropout programs for disadvantaged students, introduce innovative programs or conduct staff development programs.

Another example is the Northern Virginia Technical College whose development from conception to operation was viewed as a project. A grant was provided to assist in the planning, construction and furnishing of the physical plant of the college, as well as for constructing a curriculum, detailing course content, writing a catalog and securing a faculty to instruct the first 500 students enrolled.

Another example of an educational project was the development of education specifications for a new, comprehensive elementary teacher education program by the University of Toledo. This project had a specified goal, and the work was completed within a time schedule, cost limit and at the pre-determined level of performance.

The Management of Projects

We have now defined and illustrated the concept of a project. Next, let us consider the management of a project. There are several characteristics or techniques involved in the management of projects. For example, a project has a project director, often called a project manager. His job begins in the project planning phase and ceases at project termination. Activities or programs which are not projects are directed by people often designated as program coordinators, supervisors, administrators or directors. Such positions are usually continuous and do not terminate at a specific point in time.

The management of a project can be discussed in terms of four basic phases of operation corresponding to the life span of a project. These phases are project planning, project preparation, project operations and project termination. The project planning phase includes defining the project, detailed planning of work flow, determining schedules and resources, and calculating costs of materials, services and manpower. The project preparation phase consists of acquiring equipment, personnel and materials and organizing them so that the project can begin as planned. Project operations is concerned with carrying out project tasks and with those activities which are aimed at detecting deviations, analyzing the problem causing the deviation, making decisions in order to eliminate the deviations, and implementing those decisions to insure project success. The project termination phase includes those activities which deal with ending the project. This phase occurs after completion of the goal and involves transferring records, equipment, facilities and people to other projects. Each of these phases is discussed in more detail in Lesson 3.

Role of the Project Manager

The most important feature of the management of a successful project is the managerial ability and style of the person in charge. The role of a project director involves managerial duties, such as planning and integrating the activity of people and equipment, evaluating and making decisions affecting the project process, and implementing the decisions.

The project manager must develop skills and knowledge in the performance of his duties. These duties include: time scheduling, fund alloca-

tion, resource allocation, planning specific work schedules, delegating responsibility, evaluating and reviewing results, directing others and controlling the work.

Application of the Project Concept

Certain on-going activities or programs, existing in local school districts can be redefined as projects, and benefit as a result of this redefinition. Some examples are curriculum or textbook selection, staff orientation and development, and the development and implementation of new academic programs.

There are many important advantages to using the project approach in a local school district. Redefining an activity as a project forces the local district to ask, "What do I want to attain? How do I want to accomplish it? What are the possible levels of performance? What is not to be included? What are the milestones? What is to be delivered?

When the local school district answers these questions, it is examining in detail the elements of a program in terms of its goals. In this manner the efforts of the local school district are also focused on plans which detail the time sequence for various activities, plans for allocating resources, specific performance outcomes, and an orderly, timely control of efforts by comparing them with the plan.

There are some problems associated with the initiation of projects in the local school district setting. Project management cannot be applied to all activities of the district, because some activities cannot easily be defined in terms of a goal, a start and stop time, and an end product. The

introduction of a project management system into an existing school district functional organization may require a more complex organizational structure than currently exists. Such a change, like most organizational changes, may be perceived by some individuals as an infringement upon their authority and trigger feelings of anxiety and insecurity. It is also difficult at times to obtain qualified project managers for each project exactly when needed.

There are, however, many advantages for school districts in a commitment to a project management mode of operation. Project management requires top level management to delegate authority and decision-making to a greater number of subordinates, while the superintendent maintains overall responsibility and accountability. This delegation of authority and decision-making can result in significant staff growth and development and in the creation of a reservoir of more capable people within the school district.

Project management can be used within the district to improve the effectiveness and efficiency of the implementation of a wide range of goals. Project management can spotlight resource needs for the support of a wide range of school programs. It can also strengthen the evaluation function by more clearly specifying the performance being sought. The project management process permits examination of the deviation of operations from their plans, and thereby makes it possible to more readily identify potential problems that may arise during the operation of a program.

The accomplishment of planned goals, with cost awareness, improves the relations of the school with the community. The public education system has been under increasingly severe attack. Schools have often not been very successful in informing the public about the goals of their projects. Very often the school district issues a report to the community which tells how

many students are enrolled, how many employees there are, how much money has been spent per student, how many new classrooms have been built, and so forth. These are all input measures.

With project management the school district can define the goals of its projects in terms of output performance, i.e., achievements. With project management we can focus on goals, relate costs to the achievement of those goals, locate the responsible persons, and use project reports to substantiate our claims to the community. This is fully realized when many of a school district's activities are separated into appropriate segments and treated as projects, and when the cost of each segment can be analyzed. If activities and achievements are evaluated for the district as a whole, then it can be shown to all that the various school system operations are being directed in a desired fashion toward an overall goal.

A project management capability in a local school district also allows for those activities which can be considered as projects to be evaluated in terms of cost effectiveness. If project management efforts prove successful, the school system can subsequently use those experienced project managers, and resulting project experience, to conduct other activities of the local school district as projects.

An effective project management capability thus allows the local school to benefit from clear goal statements, to generate detailed plans specifying time, resources and performance, and to develop an orderly review and control of project efforts with respect to the project plans. A local school can establish a management capability to deal with complex projects, if its top management is committed and willing to support the facilitating organization and procedures which identify a project management capability.

Turn the page and read the directions for the discussion questions.

Lesson 1--Building Conviction

Discussion Questions

Directions: Given below are a series of discussion questions. They may be used in any of the following ways. It is suggested that you allow approximately 10 minutes for each question.

1. *The student working independently is to contemplate the discussion questions and write down an outline of the answer.*
2. *A group of students who have completed the lesson should select a discussion leader, discuss the questions, and try to obtain consensus of opinion on the questions.*
3. *A leader and a group of students after completing the lesson, will pursue the discussion topics attempting to obtain consensus of opinion on the questions.*

1. Can you name three on-going activities or work efforts in your school district that fit the definition of a project? Why are they "projects"? Can you name an on-going program in your school district that is not considered a "project"? Why is it not a "project"?

2. Can you name an on-going activity or work effort in your school district that could be re-oriented as a project? What might have to be done to re-orient it as a project?

Directions: After you have finished consideration of the questions above, please turn the page and complete the Lesson Quality Control Form.

Lesson 1--Building Conviction

Lesson Quality Control Form

Directions: Please take time to carefully answer the four questions given below. Your answers will provide valuable information for the revision and improvement of this lesson. Feel free to write additional comments or recommendations on the back of this form. Your responses will be kept strictly confidential. Please write the last four digits of your Social Security number on the line below so that the pages can be identified in the event they become separated_____.

Thank you for your assistance.

1. Indicate your overall impression of the quality of this lesson.

☐ Excellent ☐ Very Good ☐ Good ☐ Fair ☐ Poor

2. What do you feel is the most positive aspect of this lesson?

3. What do you feel is the most negative aspect of this lesson?

4. What would you suggest to improve this lesson?

Turn the page and proceed

Lesson 1--Building Conviction

Termination Instructions

Upon completion of the Lesson Quality Control Form, you are to:

Tear out and staple the pages of the Lesson Quality Control Form.
Place the form in the special envelope provided.
Mail the envelope to Research for Better Schools, Inc., Suite 1700, 1700 Market Street, Philadelphia, Pennsylvania 19103.

This lesson on building conviction is now completed. Lesson 2 entitled "Organizational Structuring" is the next lesson in the sequence; you are advised to locate the lesson and read the introductory pages.

MODULE ONE

PROJECT MANAGEMENT EXECUTIVE ORIENTATION

Lesson 2 -- Organizational Structuring

Project Management Component
Administering for Change Program
Research for Better Schools, Inc.
1700 Market Street
Philadelphia, Pennsylvania 19103
May 1973

Lesson 2--Organizational Structuring

Introduction to Lesson

This lesson contains the following items. Make sure that each item is present before starting to work through the lesson.

Page

A. Booklet for Executive Orientation

Overview and objectives 2.2
Lesson abstract and content outline 2.3
Lesson text 2.6
Discussion questions 2.12
Lesson Quality Control Form 2.14

B. Set of Color Slides entitled "Module 1--Executive Orientation, Lesson 2--Organizational Structuring."

C. Cassette Tape entitled "Module 1--Executive Orientation, Lesson 2--Organizational Structuring."

EQUIPMENT NEEDED. The following equipment will be required for this lesson and you are advised to arrange for their use:

cassette tape recorder
carousel slide projector
projection screen

TIME REQUIRED. The tape-slide presentation runs approximately 12 minutes. The total time needed to complete the lesson depends upon the amount of time spent on the questions provided at the end of the lesson. It is suggested that you allow approximately 10 minutes for each question. Also, an additional 15 minutes may be required to read and complete the other parts of the lesson.

Turn the page and read the Overview and Objectives.

Lesson 2--Organizational Structuring

Overview and Objectives

OVERVIEW

The previous lesson introduced the emerging concept of project management in education; the advantages and limitations of project management; and the potential payoff for the reorientation of activities in school districts.

This lesson deals with general management concepts and changes of management structure and practices required to adopt a project management capability. The next lesson deals in greater detail with the four phases of project management and amplifies the requirement for school system support of the individual projects.

OBJECTIVES

1. The student is to be familiar with the definitions of "management" and the general functions of planning, organizing, directing, and controlling.

2. The student is to identify the patterns of organizational structure for the incorporation of project management in local school districts.

3. The student is to cite the necessary elements for installing a project management capability within the local school district.

4. The student is to identify a plan for implementing a project management system into a local school district.

Turn the page and read the Lesson Abstract and Content Outline.

Lesson 2--Organizational Structuring

Lesson Abstract and Content Outline

ABSTRACT

The management organization of a local school district is examined using general management terms.

Three types of organizational structures are presented in conjunction with an examination of the changes needed if a project management capability is to be effectively utilized. School administrative personnel are encouraged to show conviction for project management capability.

CONTENT OUTLINE

A. A number of considerations in utilizing project management are required by the school district administration.

   1. General management concepts are used in project management.

      a. A subordinate-superior managerial relationship is common to all types of management.

      b. The school district should create a work environment that is conducive to effective work.

      c. The concept of getting things done through people is an important one to emphasize.

   2. Several functions of management delineate the total management effort. These are:

      a. Planning

      b. Organizing

      c. Directing (motivating)

      d. Controlling

B. Projects operate within a local school setting.

   1. The placement of projects in the local school district can take one of several forms. These are:

a. Separate organization,

b. Vertical or centralized placement, or

c. Horizontal or decentralized placement.

2. Each type of project placement has advantages and disadvantages and staffing variations.

C. The existence of a project management capability in the local educational agency requires personnel and resources to:

1. Identify projects

2. Develop proposals

3. Carry out proposal/projects

4. Establish project management procedures

5. Provide a center for project management information

D. There are several considerations for installing a project management capability into a local educational agency.

1. The school district should determine a goal or principle for its project management capability.

2. There needs to be a recognition of the value or need for the capability.

3. There must be commitment to project management on the part of top management.

4. All operating levels of the school district should be receptive to the required changes.

5. The local educational agency must become flexible and adaptable.

6. There is a need for training personnel in management techniques.

7. An evaluation of the program's effectiveness is based on clear goals or objectives.

8. Project management policies and procedures need to be developed.

E. Knowledge of project management and conviction that project management is the most effective means of providing solutions for change in the local educational agency is needed.

Turn the page and proceed

Lesson 2--Organizational Structuring

Instructions

1. *Set up the recorder, projector, and screen.*
2. *Place the carousel slide tray for this lesson onto the projector and advance the tray to the start of Executive Orientation--Lesson Two.*
3. *Place the cassette tape for this lesson into the recorder and rewind to the rewind stop.*
4. *Start the recorder and advance the slides with the "change tone."*

Lesson 2--Organizational Structuring

Lesson Text

Introduction

The previous lesson introduced the concept of project management and discussed its potential for education. Proper use of the concept will require some adjustments in our thinking. This lesson will indicate some of these needed adjustments. We will point these out by looking at three general areas: a review of management and its functions, the location of projects within an organization, and the requirements for developing a project management capability in a local school district.

Management Functions

In order to have a working understanding of project management, it is essential to develop an understanding of the concept of management. To define management and its functions, an assumption is made that a formal organization of superior-subordinate relationships exist. In this framework, management's overall function is to create an environment which will facilitate the achievement of organizational objectives by providing those conditions which enable employees to work effectively.

Management deals with decision-making in allocating resources and directing the actions of people toward the attainment of desired ends by using the best possible means. You are managing when you plan, organize, direct, and control the use of resources and human efforts. These four basic activities form the functions of management.

Project management, which incorporates the basic management functions is, therefore, the process of making decisions about the accomplishment of

a project goal through the execution of a temporary effort characterized by time, cost and performance specifications.

Managers, whether they be heads of governmental agencies, college deans, department heads, superintendents or principals, are all engaged in getting things done with people. Managers perform the same functions regardless of their level in the organization or the type of enterprise they are pursuing. Only the techniques of applying the functions are modified from situation to situation.

The most typical, or accepted, method of classifying management functions is to group them according to the activities of planning, organizing, directing (or motivating), and controlling. It is often not possible to place all management functions neatly into just one of these categories, since they tend to overlap; however, this classification is generally helpful and workable.

Planning involves making a set of initial decisions about the optimum allocation of resources to a set of tasks designed to attain specific desired goals. It consists of the activities of setting goals, delineating work, establishing the work flow, determining the time and resources (money and manpower) required to achieve the goal, costing the resources, and preparing a budget.

Organizing involves arranging selected people in patterns of relationships relative to authority, responsibility, roles and accountability in order to facilitate the accomplishment of desired goals. It also includes recruiting, selecting, training, and assigning persons to accomplish these activities. This sub-function of organizing is called staffing. Organizing is also manifested in the preparation of policies, procedures, and practices

related to project operations.

Directing involves the employment of diverse forms of human interaction so as to lead, motivate and guide people in the performance of their tasks. It also involves guiding and supervising subordinates who require clarification of assignments, guidance toward improved performance, and the motivation of people to enable them to achieve the stated goal.

Controlling involves the detection of deviations between what is planned and what is actually happening, the analysis of the deviation, a proposed solution, and the implementation of corrective action to insure the successful accomplishment of the goals. The controlling function is exercised through an iterative problem-solving process.

Occasionally, there is concern about the order in which the functions are, or should be, performed. Planning is generally considered first, while organizing, directing and controlling follow in sequence. In practice, the functions are carried out concurrently. Furthermore, the functions overlap, so that a manager is often performing several functions simultaneously. Let us now look at how projects are placed in the organizational structure.

Organizational Placement of Projects

In order to achieve objectives, carry out plans, and make it possible for people to work effectively, there must be a logical scheme of activities and authority. Normally, major school district activities are functionally organized on equal levels of authority and their directors are responsible to a single superior authority. This type of grouping is generally known as a functional organization. Each unit in the structure deals with one function, or area, of activity, such as curriculum development, personnel

selection and development, educational operations, or business services. Each function contains staff and line relationships within its own area of responsibility.

Within this typical organizational structure, there are three general patterns of project placement: separate organizational placement, vertical or centralized placement and horizontal or decentralized placement.

In the separate organizational approach the project is operated as a major activity in the way that the other major functional line groups operate. The project is independent of other functional departments and is considered self-sufficient with regard to project requirements. Staffing is provided by transferring personnel from other departments, by hiring personnel from other departments, or by hiring personnel from external sources. Figure #1 illustrates this type of project placement.

The advantages of this type of organizational placement are, that the project director has direct control over all the dimensions of the project, is the main line of authority leading directly to the chief executive of the local educational agency, and is the focal point of project accountability and information. The major limitation of this placement is that the staff can be dissolved upon completion of the project. Consequently, some valuable, trained specialists can be lost.

The vertical or centralized pattern is one that puts the project within an existing line unit or department. The majority of the project staff, then, are drawn from that department. Figure #2 illustrates this type of project placement.

The advantage of this approach is that the lines of authority and responsibility are well defined and known to all persons working on the project.

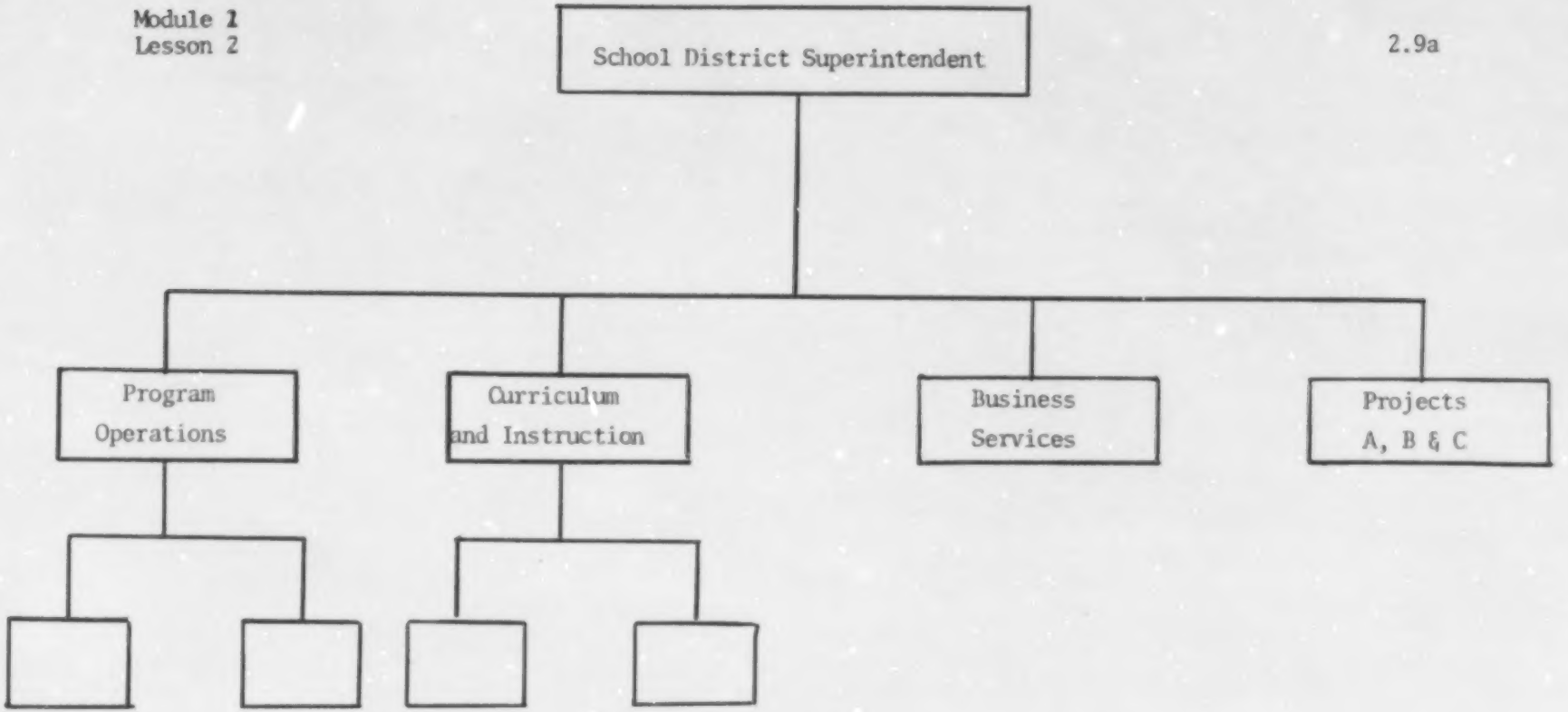

Figure #1--Separate Project Placement

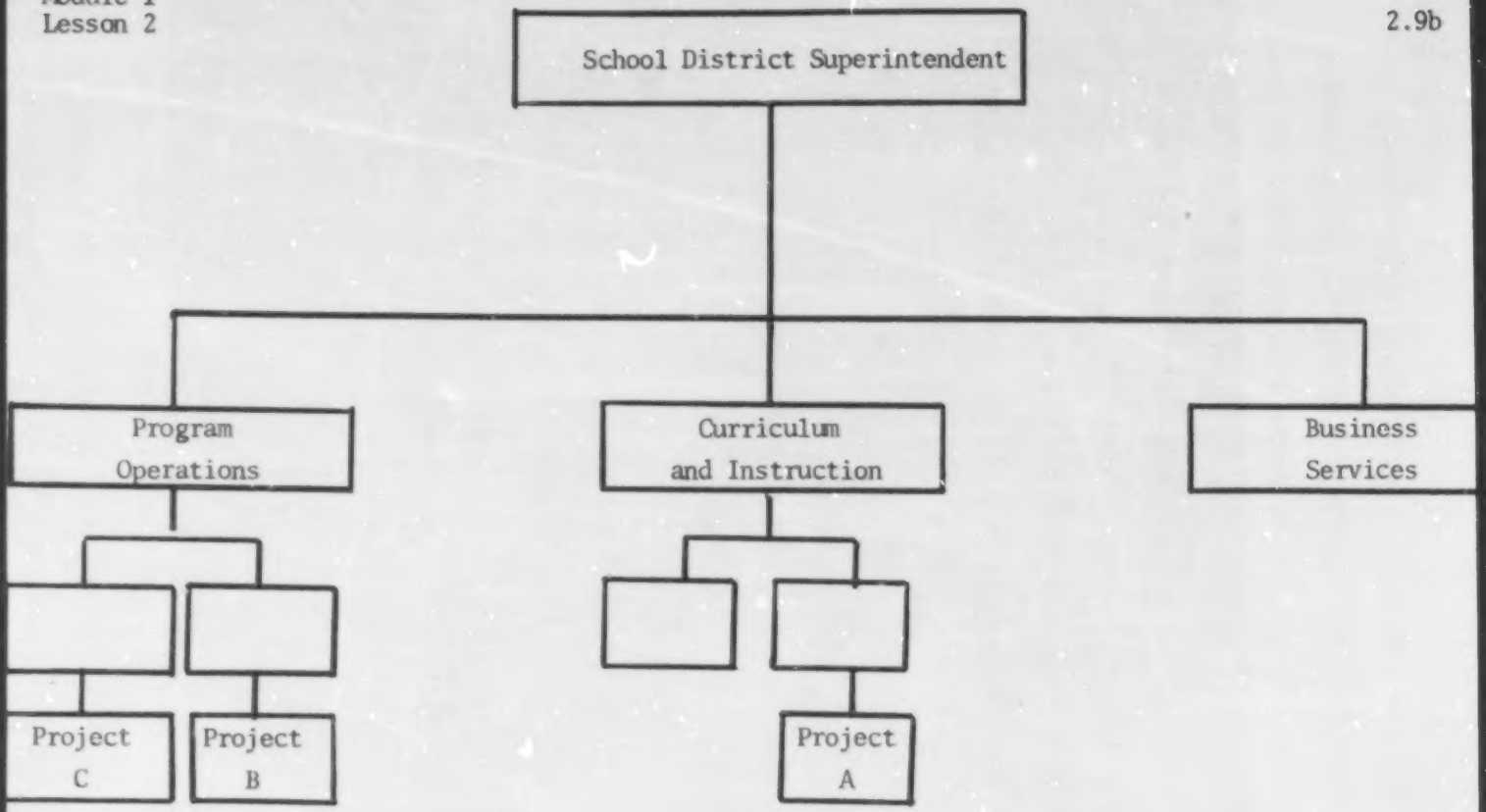

Figure #2--Vertical Project Placement

The limitations are that the functional department may or may not have the numbers or types of staff required for work on the project, and the number of projects can often increase in size and power until they reach the level of a major department.

The decentralized approach to project placement involves superimposing it upon the existing structure, with its established lines of responsibility and authority. The project tasks are assigned to personnel who remain within their departments or functional units. The project manager, however, is responsible for the completion of the work which cuts horizontally across the vertical organizational structure. Figure #3 illustrates this type of project placement.

The primary difficulty in this approach is that the project manager often lacks direct authority over the functional areas in which the project tasks are accomplished. Consequently, the functional personnel will generally respond first to the needs of the functional authority (i.e. their direct superior) and only second to the project authority.

The placement of projects with a local educational agency is not necessarily limited to these three patterns, since organizational grouping of activities and personnel are seldom the same in all local school settings, but these are the three patterns most often encountered.

Developing a Project Management Capability

Having considered patterns of project placement, let us now turn to what it takes for a school district to have a project management capability. Simply stated, having a project management capability means that organizational structures and processes are established and operating in such a manner

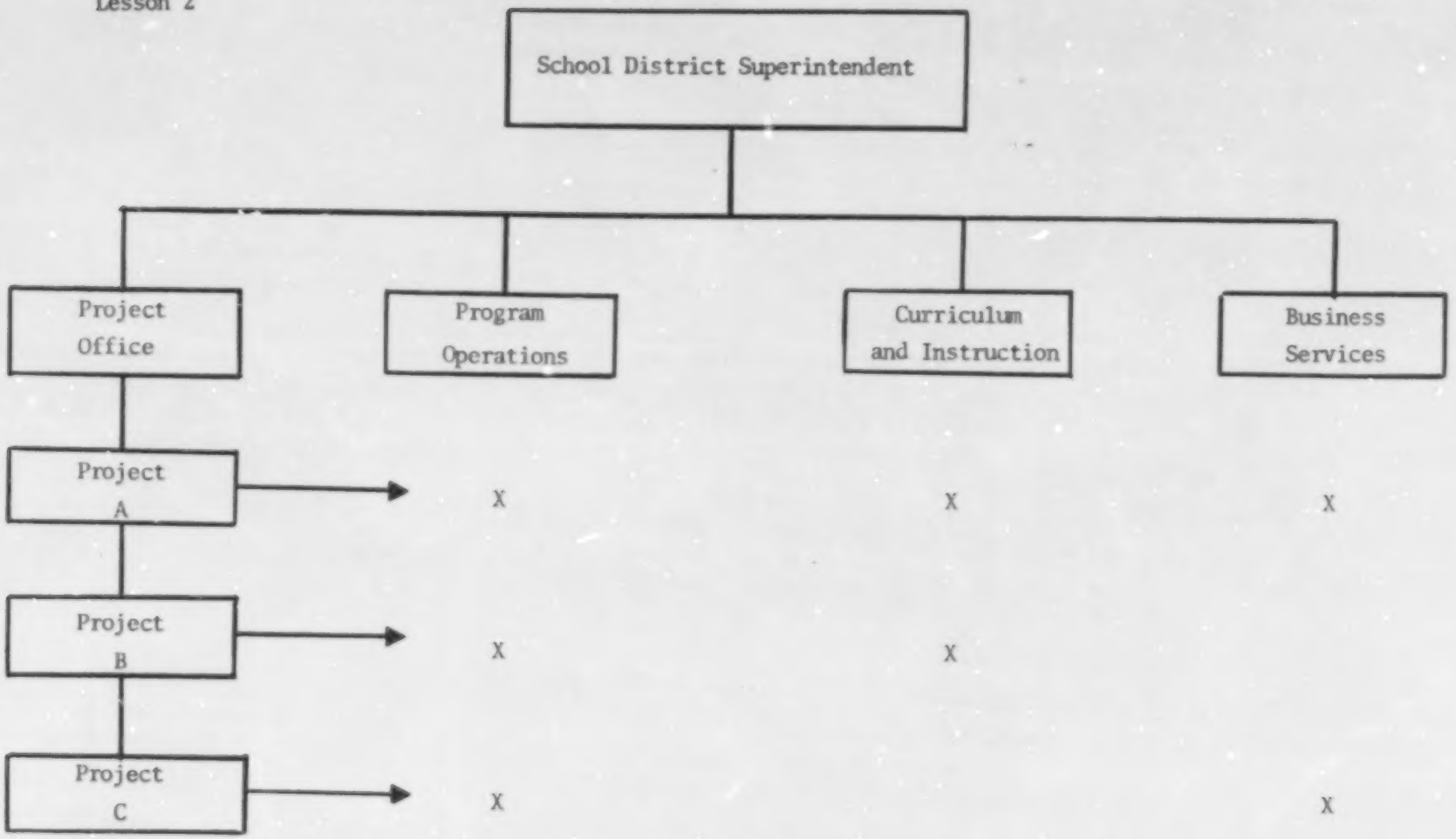

Figure #3--Horizontal Project Placement

that a number of activities (nominally called "projects") can be adequately planned and executed simultaneously and on a continuing basis. Operationally, this means that there is a defined organizational center, with personnel who can identify projects, develop management plans for reaching specified objectives, and assist in conducting several projects simultaneously. The development of a project management capability as defined above requires that a school district address itself to several important considerations such as those listed below.

1. Stating objectives, or purposes in such a way that the effective attainment of desired outcomes is promoted.
2. Securing organizational commitment as evidenced by resources allocations commensurate with the effort required.
3. Securing staff acceptance through involvement and participation.
4. Satisfying the need for training to develop understanding and competencies.
5. Developing policy and procedures to support project operations.
6. Establishing organizational structures to facilitate project management system activities.
7. Supplying a means of assessing project value, impact and significance as they relate to the school system, as well as to the operation of project activities.

Summary

"Management" involves the execution of the basic functions of planning, organizing, directing and controlling. The three most frequently found patterns of project location in an existing functional organization are separate,

vertical and horizontal placement. Having a project management capability means that the organizational structure has a continuing capacity to deal with those types of activities commonly referred to as projects.

To achieve this end requires that key personnel on all levels of the organization be familiar with, and be able to apply, project management skills to project-type activities.

Turn the page and read the directions for the discussion questions.

Lesson 2--Organizational Structuring

Discussion Questions

Directions: Given below are a series of discussion questions. They may be used in any of the following ways. It is suggested that you allow approximately 10 minutes for each question.

1. *The student working independently is to contemplate the discussion questions and write down an outline of the answer.*
2. *A group of students who have completed the lesson should select a discussion leader, discuss the questions, and try to obtain concensus of opinion on the questions.*
3. *A leader and group of students after completing the lesson, will pursue the discussion topics attempting to obtain concensus of opinion on the questions.*

1. The management cycle is said to include planning, organizing, directing and controlling. Does this description adequately explain management activity?

2. Discuss the advantages and limitations of vertical, horizontal and separate organizational placement of a particular project in your school district. Which type of placement would be best for the project, and what are your reasons?

3. What are some of the considerations and actions that require the attention of school executives in order to realize a full project management capability in a local school district? Discuss the relative importance of these actions.

Directions: After you have finished consideration of the questions above, please turn the page and complete the Lesson Quality Control Form.

Lesson 2--Organizational Structuring

Lesson Quality Control Form

Directions: Please take time to carefully answer the four questions given below. Your answers will provide valuable information for the revision and improvement of this lesson. Feel free to write additional comments or recommendations on the back of this form. Your responses will be kept strictly confidential. Please write the last four digits of your Social Security number on the line below so that the pages can be identified in the event they become separated_____.

Thank you for your assistance.

1. Indicate your overall impression of the quality of this lesson.

☐ Excellent ☐ Very Good ☐ Good ☐ Fair ☐ Poor

2. What do you feel is the most positive aspect of this lesson?

3. What do you feel is the most negative aspect of this lesson?

4. What would you suggest to improve this lesson?

Turn the page and proceed

Lesson 2--Organizational Structuring

Termination Instructions

Upon completion of the Lesson Quality Control Form you are to:

Tear out and staple the pages of the Lesson Quality Control Form.
Place the form in the special envelope provided.
Mail the envelope to Research for Better Schools, Inc., Suite 1700, 1700 Market Street, Philadelphia, Pennsylvania 19103.

This lesson on organizational structuring is now completed. Lesson 3 entitled "The Life Cycle of a Project" is the next lesson in the sequence; you are advised to locate the lesson booklet and read the introductory pages.

MODULE ONE

PROJECT MANAGEMENT EXECUTIVE ORIENTATION

Lesson 3 -- The Life Cycle of a Project

Project Management Component
Administering for Change Program
Research for Better Schools, Inc.
1700 Market Street
Philadelphia, Pennsylvania 19103
May 1973

Lesson 3--The Life Cycle of a Project

Introduction to Lesson

This lesson contains the following items. Make sure that each item is present before starting to work through the lesson.

A. Booklet for Executive Orientation

	Page
Overview and objectives	3.2
Lesson abstract and content outline	3.3
Lesson text	3.7
Discussion questions	3.21
Lesson Quality Control Form	3.22

B. Set of Color Slides entitled "Module 1--Executive Orientation, Lesson 3--The Life Cycle of a Project."

C. Cassette Tape entitled "Module 1--Executive Orientation, Lesson 3--The Life Cycle of a Project."

EQUIPMENT NEEDED. The following equipment will be required for this lesson and you are advised to arrange for their use:

cassette tape recorder
carousel slide projector
projection screen

TIME REQUIRED. The tape-slide presentation runs approximately 26 minutes. The total time needed to complete the lesson depends upon the amount of time spend on the questions provided at the end of the lesson. It is suggested that you allow approximately 10 minutes for each question. Also, an additional 15 minutes may be required to read and complete the other parts of the lesson.

Turn the page and read the Overview and Objectives.

Lesson 3--The Life Cycle of a Project

Overview and Objectives

OVERVIEW

Prior lessons in this module have presented information about the emerging role of project management in local school districts and the general functions of management and the placement of projects in local school settings.

This lesson will present information regarding the various actions or operations associated with the planning and carrying out of projects in the school setting. General operations will be delineated along with some of the specific actions to be taken in each operation. The lesson following this one is devoted to identifying a variety of sources of information about and assistance on project management.

OBJECTIVES

As a consequence of participating in this lesson, the following objectives should be reached.

1. The student should be able to name the four major phases of project operations.

2. The student should be able to detail the major steps in each of the four phases.

3. The student should be able to indicate actions which an educational executive can take in order to facilitate the activities involved in each of the phases.

Turn to page 3.3 and read the Lesson Abstract and Content Outline.

Lesson 3--The Life Cycle of a Project

Lesson Abstract and Content Outline

ABSTRACT

The major activities carried out in the course of managing a project from its start to its end can be divided into four major phases. They are project planning, preparation or start-up, operational control, and project termination. Within each of these divisions or phases, many subtasks have to be carried out. The educational executive can make contributions to each of these phases in order that the project may go more smoothly. The lesson discusses in detail each phase along with suggesting ways that the educational executive can be helpful.

CONTENT OUTLINE

A. Introduction

1. Successful project management requires an understanding of the major phases involved in carrying out a project effort.

2. Four basic phases in project management can be categorized as follows:

   a. Planning Phase
   b. Implementation or Start-Up Phase
   c. Operational Control Phase
   d. Termination Phase

3. An overview of each of these phases is presented in this lesson.

B. Planning Phase

1. Planning is a process focusing upon establishing a set of initial decisions regarding project performance, schedule, and budget.

2. The project planning process involves five basic steps.

   a. The first step establishes the project goal and objectives, the work breakdown structure, and performance specifications.

   b. The second step establishes the logical order of completing the several tasks of the project.

c. The third step involves estimating time for each task as well as for the total project.

d. The fourth step identifies needed resources (personnel, materials, equipment, etc.) and develops a schedule for the project.

e. The fifth step focuses upon developing estimates of costs, preparing the budget, and establishing expenditure plans.

3. The culmination of the planning process is a proposal document or plan which is forwarded to a funding agency.

C. Project Start-Up and Implementation Phase

1. Successful project start-up requires that an implementation plan be developed and executed.

2. The implementation plan identifies activities which should be carried out before the initial date as well as to be carried out during the first days of the project.

3. In addition to the implementation plan, other activities involved at this phase are modifying the project proposal consistent with the contract, the establishment of project policies and proceeds, the delineation of project responsibilities, and the establishment of a project information system.

D. Operational Control Phase

1. Successful operation of a project, once underway, depends upon providing the project management with necessary information about project status.

2. The actions carried out in this phase derive from the management function of control wihch is basically concerned with problem identification and correction.

3. A reporting system of some form is essential to carrying out the function or control.

a. The first step is to identify the problems or the deviations from the plan.

(1) Deviations or problems are identified by comparing actual performance to planned performance.

(2) Once identified, the deviations are ranked in order of seriousness and the cause of the deviations established.

b. The second step is to establish the goal desired in solving the problem, creating alternatives, solutions, and choosing the most desirable one.

c. The third step requires that the chosen solution or corrective action be communicated to the project staff for implementation and that procedures be initiated to make the change.

E. The Termination Phase

1. The termination phase is concerned basically with two fundamental situations.

a. One situation centers around installing the project product as part of the on-going operations of the school district.

b. The second situation involves the phasing out or shutting-down of the project operation.

2. The termination phase requires that plans be developed for such activities as the transfer of personnel and equipment, plus the storage of necessary records.

3. In most projects, a final report is required by the sponsoring or funding agency and must be prepared.

4. Project histories are often written to serve as guides for use by other project managers as well as serving as a record of project activities not included in the final report.

F. The successful conduct of the several project phases requires that the educational executive be committed to the project.

Turn the page and proceed

Lesson 3--The Life Cycle of a Project

Instructions

1. *Set up the recorder, projector, and screen.*
2. *Place the carousel slide tray for this lesson onto the projector and advance the tray to the start of Executive Orientation--Lesson Three.*
3. *Place the cassette tape for this lesson into the recorder and rewind to the rewind stop.*
4. *Start the recorder and advance the slides with the "change tone."*

Lesson 3--The Life Cycle of a Project

Lesson Text

Introduction

The first two lessons in this module have presented the general definition and explanation of what projects and project management are, described the duties of the project manager or director, presented some elementary concepts of general management, and identified some of the organizational considerations involved in the installation of a project management capability in a local school district.

The purpose of this lesson is to provide an overview of the management of a project, a more detailed explanation of project management, and to point out how and where the educational executive might aid the project director.

The four phases in the life of a project--planning, preparation, operations and termination--were introduced in the first lesson. Each of these phases is explained further in the paragraphs that follow.

Planning Phase

The planning phase of a project is concerned with putting a project together. It answers questions like: What? How? How long? When? Where? With what? and How much? In other words, an initial set of decisions about the project effort is made. Five basic activities are involved in project planning. They are: project definition; arranging the work into a logical sequence; estimating time for each work activity; establishing a work schedule and allocating resources; and estimating costs and preparing a budget.

In defining a project, the most important question to ask is: What is the goal of the project? What does one want to accomplish? A goal is usually

a broad and general statement of purpose to have attained something in the future. A goal must be divided into smaller and more specific objectives in order to permit the specification of the project work or tasks. This dividing process is called project definition or work breakdown structure development. At this time the project director also specifies the performance standards for the work to be done.

The second step in planning is arranging the work activities into a logical or desired, sequence. The arrangement of tasks by means of logic or desire yields a work sequence or work flow. In many cases, tasks can be performed concurrently or in parallel. Techniques like flow charting or networking have been devised to aid in sequencing the tasks. The project director should be able to employ them for this step of project planning.

The third step in planning is concerned with estimating time. The project director, or his associates, must estimate the time that it will take to accomplish each one of the tasks in the sequence. Estimates of task accomplishment times are usually more reliable when made by those persons most knowledgeable about the work. The project manager should, therefore, seek out such persons within the school district to aid him in making the time estimates. He then incorporates these time estimates in his plan and computes the total time required to complete the project.

The fourth step of planning is concerned with scheduling and specifying resource requirements. Again, with the aid of the people most knowledgeable about the work, the project director estimates the resource requirements for each task. He records the resource requirements on a work sequence chart, or some other form. He then establishes a schedule or calendar for the project.

The fifth step in project planning is cost estimation and budget preparation. In cost estimation, the project director must determine the cost of the resources that were specified for each of the tasks in the schedule. From these data, a budget and an expenditure plan is prepared.

Having performed these five steps in planning, the project director should now have a project plan. The plan can be utilized to prepare a project proposal. The proposal is then submitted to the contracting agency for funding. If it is funded, the educational executive signs the contract and accepts the funds.

How can the educational executive help the project director in the planning phase of project management? He can aid by helping to establish the goal of the project, providing the project director with access to experts in functional departments, informing him of school district policy and constraints, and reviewing the project at each step in the plan and the proposal.

Preparation Phase

The preparation phase follows the planning phase. Here one is concerned with the activities that are performed prior to, and just after, the initiation of the project. Almost all projects require that resources be available so that the project may start operating on a particular day. Necessary personnel, facilities, equipment, materials, services and information must be available for the project as required. A preparation plan should be developed to accomplish this task. In many contracts awarded by federal or state governments, the contracting agency will notify the local school district several weeks before the start-up date. This allows the project director to initiate the preparation plan well before the start-up date.

Arrangements for personnel must be made within the school district or by hiring personnel from outside the school district. Facilities and equipment are generally furnished by the local school district and arrangements for them should be made. Equipment may be either purchased or leased, if it is not available. Materials and special services should be identified and their acquisition should be described in the plan.

The preparation phase also includes activities which occur immediately after the start-up date. In many cases, a project proposal may not correspond to the contract, or the specific manpower needed may not be available. The project director must then respecify the work activities, schedule, and budget into a revised plan for the project. With the help of the project personnel, responsibilities for each member of the staff should be established. The project director then can establish the lines of authority corresponding to those responsibilities and create an organizational chart if needed. The project director should also develop those administrative policies and procedures for the project that are not covered by the policies and procedures of the local school district.

During this period a project information system should be established. The purpose of a project information system is to keep the project director and his staff informed of the planned vs. the actual status of the project. The three components--performance, time and cost--which were defined in the planning phase must be incorporated into the information system. By specifying these three planning dimensions, the project director has a standard of comparison by which to discover any discrepancies occurring during the operation of the project.

The start-up or preparation phase of a project is concerned with creating and executing an implementation plan to aid in acquiring the resources necessary for carrying out the project, establishing the project within the framework of the local school district, replanning if necessary, organizing staff and delineating their responsibilities, establishing the administrative policies and procedures for the project, and creating a project management information system.

How can the educational executive aid the project director in this phase of a project? By providing him with the policies and procedures of the school district if he is not already familiar with them, reviewing the preparation plan with him, and providing information, guidance and experience to organize the staff and create the project information system, By far the most important service the educational executive can perform is to be personally committed to the project and to aid in establishing cooperation, coordination and communications between the project and the functional units within the local school setting. The initial commitment of top administraters should have occurred in the planning phase. In this phase it is reinforced.

Operations Phase

The third phase in the life of a project is the operations phase. This phase is concerned with the actual conduct or operation of the project. After the activities in the planning and preparation phases are performed, the actual work of the project can start.

Even after the best of planning efforts, actual operations do not always go as planned. The project director must have a system, or procedure, for knowing at all times the status of the project, so that problem areas

can be identified and corrective actions taken. Problem analysis and corrective actions are primary management activities of the operational phase of a project.

Operational control is basically a problem-solving process that can conveniently be divided into three steps. The first step involves the identification and analysis of problems, utilizing the project plan as a guide. The second step is to develop alternative solutions to correct the problem and to select the most desirable solution. The third step is to implement the solution to the problem, communicate changes in operations to the staff and affected offices, and monitor the impact of the corrective action. This three-step problem-solving or control process, presented in elementary form, is employed as necessary in the operations phase of a project. Let us look at this control process in more detail.

The project director must always know the status of the work in progress, work completed, and work yet to be done. This requires information about the actual situation. Therefore, to manage the project, the director must first establish a reporting system to provide him with the information he needs. In order to establish the reporting system, reporting objectives and procedures must be created to furnish the needed information. The project director and his staff must decide on the types of reports that are to be created, when they will be made, the content and format of the reports, and who will receive them.

Project reports should always compare the planned situation to the actual situation. If the information in a report indicates that there is a difference between the planned situation (the "should's") and the actual situation (the "actual's"), then a deviation exists. Any deviation between the

should's and the actual's is a management problem. Deviations may occur in either the budget, the schedule, or in performance--sometimes in all three.

Several deviations may exist simultaneously. The deviations should be identified and listed in terms of their importance in impeding progress toward achieving the overall project goal. By ordering them, the project director establishes the priority of solving the most serious problems first.

With the aid of the staff, the project director must fully investigate all aspects of the problem. In most cases, a deviation occurs because there was some unplanned or unanticipated change. The unplanned change usually causes an adverse effect to occur. The adverse effect is the deviation identified. In order to identify the unplanned change, or cause of the deviation, one must first hypothesize causes that attempt to explain the deviation. These hypotheses must then be tested to determine the most likely cause.

Once the cause of the deviation has been determined, decision-making processes are utilized to select the appropriate course of action to correct the deviation. From the project management point of view this process consists of specifying the result or ends that must be achieved, developing alternative courses of action to achieve the result or specified ends, and selecting the most desirable alternative by judging various alternatives against criteria of advantages and disadvantages.

The results to be achieved should be listed in their order of necessity. Some of these ends will be absolutely necessary to restore project movement while others will only be desirable. The project director should consider each of them and list them in a priority order.

There are usually a number of alternative courses of action that will solve a particular problem. As alternatives are created, the project director

should reject those which are obviously not feasible. In rejecting such unfeasible courses of action, the project director can more fully concentrate his efforts upon selecting the best alternative from a smaller set of feasible alternatives.

The project director should then judge the performance of each feasible alternative against his list of absolutely necessary ends. The alternative with the highest score should be the one most capable of achieving the results that must be attained. However, even though one alternative course of action has the highest score, the result of selecting that particular course of action may yield undesirable side effects. The project director must consider the undesirable consequences of the two or three most desirable alternatives before making his final selection. If any of the alternatives might yield highly undesirable consequences which also might have a high probability of occurring, it should be rejected. A trade-off can be made between the relative gains and losses of each alternative in order to select a final course of action.

In order to aid the project director in carrying out this decision, an implementation plan or change memorandum should be prepared. The change memorandum should specify in detail the action that is to take place. To insure that all the necessary items are included in the change memorandum, the project director would be well advised to follow the same general thinking that he utilized in creating the project plan. The project director then informs the project staff of the action that is to take place and of their responsibilities in carrying out the action and making the change. Top management must also be informed of the project problems and of the actions taken to eliminate them. The project director should report the changes to

them. A report to top management should contain a description of the deviation which exists, the probable cause of the deviation, the two or three alternative courses of action that have been devised to alleviate the deviation, the selected course of action, the reasons for the selection of that course of action and the plan or change memorandum for implementing the selected course of action. In executing the action described in the change memorandum, the project manager must make sure that it is carried out fully and efficiently. In order to insure success, the project director should verify that the responsibilities and directions given to the staff are understood and carried out.

The educational executive can aid the project director in the operations phase by furnishing him with information on the reporting system used by the school district; helping him to establish criteria for judging the deviations; aiding him in identifying the cause, developing ends and alternatives; determining consequences of, and implementing the corrections for major deviations in the project; lending the experience and insight he has gained in decision-making for the school system; and giving encouragement throughout the operation of the project.

In summary, the process of operations control is continuous, because initial decisions are always reevaluated as the project proceeds toward its goal. When discrepancies occur between plans and actualities, the three steps of deviation identification, decision-making, and decision implementation are repeated as necessary throughout the project.

Termination Phase

The fourth and final phase in the life cycle of a project is the pro-

ject termination, or transition, phase. The basic activities that must be performed in the termination phase are the creation of the project final report (if required), the reassignment of facilities and personnel within the school district where appropriate, the storage of records, and the preparation of a project history report.

In creating the final report, the project manager must make sure that the report contains all of the elements required by the funding agency. He must make sure that the report indicates how the goal and missions of the project were accomplished and that it includes all other pertinent supportive information.

In reassigning personnel, facilities and equipment, the project director is faced with two possible termination situations. The two situations are project phase-out and project transition. In project phase-out, the project ceases to exist altogether. In project transition, the project is incorporated into the local school setting as an on-going program.

In the case of project phase-out, the project director has the responsibility of reassigning the professional, technical, and clerical personnel in his project. If possible, the personnel should be reassigned to other functional units or other projects, so that their acquired skills are not lost. If the school system cannot absorb the personnel, the project director should aid his staff in obtaining work elsewhere.

In phase-out, facilities, furniture, typewriters, dictating equipment, and specialized research equipment must also be relocated. If the facilities and equipment already belong to the local school district, they can be reassigned to the units from which they were borrowed. If, however, the facilities and equipment are owned by the funding agency, then one of two things

can take place. Either the facilities and equipment are returned to the funding agency to transfer the facilities and equipment to other projects or functional units within the school district.

For the project undergoing transition into an on-going program, the project director has to perform different activities. More than likely the project personnel, equipment and space will stay with the project after it becomes a program within the school system. If some of the other resources must be reassigned, the project director handles their reassignment in the same way as he does in a project phase-out situation.

If the project is to become a program, the transition phase can be viewed as a project in itself. One can consider it a start-up project for implementing a continuing program. The project director must then create a plan for the installation of the project into the overall program of the school system.

During the operation of the project many reports and records were created and stored. The project director must decide which records are to be retained for the school system and the funding agency. He must, therefore, create a set of criteria for the retention and storage of the project records.

In most cases the project director also is responsible for creating a project history. The project history serves as a record of events that occurred and as a learning device to avoid future errors in other projects. The history should contain aspects of contract negotiations, the project origin, the listing of personnel, causes of significant problems, remedial action, notes on the disposition of records, equipment and facilities, and recommendations for future projects. It can also serve as a report to the public.

Module 1
Lesson 3

In summary, the termination or transition phase of a project is concerned with the preparation of final reports, the reassignment of personnel and facilities, the storage of records, and the preparation of a project hisotry.

In this phase of project management the educational executive can aid the project director by reviewing the final reports and indicating any changes to be made, helping to transfer personnel and other resources within the school district, helping with negotiations with the contracting agency, aiding in the development of criteria for deciding what records are to be retained, and indicating what elements should be included in the project history report, so that it can be utilized as a learning device for future projects.

Project Support

By far the most important activity that the educational executive can perform for a project is to provide a personal commitment to the project throughout its several phases. You, as the top educational executive, have accepted the responsibility for the project and have a vested interest in its success.

The executive must communicate the need for, and the importance of, the project to the functional departments. This communication will hopefully cause the functional departments to more fully understand, and cooperate with, the project. If this method does not yield the needed results, the executive has to take the initiative to motivate the functional departments by other means.

Studies show that the projects that did not receive help of this kind from top executives were less successful than those that did receive this help.

Gaining the necessary cooperation will enable the project to accomplish its goals within time, cost, and performance standards.

Summary

The four phases of the project management process are planning, preparation, operations and termination. Project planning is a process focusing upon establishing a set of initial decisions regarding project performance, schedule and budget. Preparation is a process of identifying and implementing activities which should be carried out prior to the initiation of the project. Operations is a process which is concerned with the actual conduct, operation and control of the project. Termination is a process concerned with the phasing out or shutting down of project operations. Within each of these phases many sub-tasks have to be carried out. The educational executive can make significant contributions to each of these phases and thus, play a critical role in the success of the project goal.

Turn the page and read the directions for the Discussion Questions.

Lesson 3--The Life Cycle of a Project

Discussion Questions

Directions: Given below are a series of discussion questions. They may be used in any of the following ways. It is suggested that you allow approximately 10 minutes for each question.

1. *The student working independently is to contemplate the discussion questions and write down an outline of the answer.*
2. *A group of students who have completed the lesson should select a discussion leader, discuss the questions, and try to obtain concensus of opinion on the questions.*
3. *A leader and group of students after completing the lesson, will pursue the discussion topics attempting to obtain consensus of opinion on the questions.*

1. Should the project manager or director be involved in all phases of the project management effort or just in the last three phases of preparation, operational control, and termination? Why or why not?
2. How does the degree of effort spent in project planning phase relate to the success of the remaining phases? Should broad to detailed plans be made in the planning phase?
3. What kind of training would be needed by educational executives, beyond that presented in this lesson, if they are to become more knowledgeable about the several phases of project management?
4. What should be the qualifications of a project manager? Should he know both the several phases of project operations and the substance of the project or should he be knowledgeable about either phases or substance but not both.

Directions: After you have finished consideration of the questions above, please turn the page and complete the Lesson Quality Control Form.

Lesson 3--The Life Cycle of a Project

Lesson Quality Control Form

Directions: Please take time to carefully answer the four questions given below. Your answers will provide valuable information for the revision and improvement of this lesson. Feel free to write additional comments or recommendations on the back of this form. Your responses will be kept strictly confidential. Please write the last four digits of your Social Security number on the line below so that the pages can be identified in the event they become separated_____.

Thank you for your assistance.

1. Indicate your overall impression of the quality of this lesson.

☐ Excellent ☐ Very Good ☐ Good ☐ Fair ☐ Poor

2. What do you feel is the most positive aspect of this lesson?

3. What do you feel is the most negative aspect of this lesson?

4. What would you suggest to improve this lesson?

Turn the page and proceed

Lesson 3--The Life Cycle of a Project

Termination Instructions

Upon completion of the Lesson Quality Control Form you are to:

Tear out and staple the pages of the Lesson Quality Control Form.
Place the form in the special envelope provided.
Mail the envelope to Research for Better Schools, Inc., Suite 1700, 1700 Market Street, Philadelphia, Pennsylvania 19103.

This lesson on the life cycle of a project is now completed. Lesson 4 entitled "Securing More Information" is the next lesson in the sequence; you are advised to locate the lesson booklet and read the introductory pages.

MODULE ONE

PROJECT MANAGEMENT EXECUTIVE ORIENTATION

Lesson 4 -- Securing More Information

Project Management Component
Administering for Change Program
Research for Better Schools, Inc.
1700 Market Street
Philadelphia, Pennsylvania 19103
May 1973

Lesson 4--Securing More Information

Introduction to Lesson

This lesson contains the following items. Make sure that each item is present before starting to work through the lesson.

Page

A. Booklet for Executive Orientation

Overview and objectives. 4.2
Lesson abstract and content outline. 4.3
Lesson text 4.6
Discussion questions 4.10
Lesson Quality Control Form 4.11

B. Set of Color Slides entitled "Module 1--Executive Orientation, Lesson 4--Securing More Information."

C. Cassette Tape entitled "Module 1--Executive Orientation, Lesson 4--Securing More Information."

EQUIPMENT NEEDED. The following equipment will be required for this lesson and you are advised to arrange for their use:

cassette tape recorder
carousel slide projector
projection screen

TIME REQUIRED. The tape-slide presentation runs approximately 7 minutes. The total time needed to complete the lesson depends upon the amount of time spent on the questions provided at the end of the lessons. It is suggested that you allow approximately 10 minutes for each question. Also, an additional 15 minutes may be required to read and complete the other parts of the lesson.

Turn the page and read the Overview and Objectives.

Lesson 4--Securing More Information

Overview and Objectives

OVERVIEW

Previous lessons in this module have provided information on projects, their relationship to the school system, general functions of management and the specific nature of project management. The aim of this lesson is to aid the educational executive in securing more information about the topics covered in the previous lessons.

The lesson should provide an effective method for securing additional information. It indicates the sources where information and help is available for assistance in project management. The lesson also indicates that information and help should be specified in detail when securing it.

OBJECTIVES

As a consequence of participating in this lesson, the following objectives should be reached.

1. The student should be able to utilize the method of specifying questions of interest before attempting to secure information.

2. The student should be able to state the locations where information and help is available for assistance in project management.

Turn the page and read the Lesson Abstract and Content Outline.

Lesson 4--Securing More Information

Lesson Abstract and Content Outline

ABSTRACT

To secure information on project management the educational executive should first discern the questions that he needs to have answered. Once the questions have been posed, the executive can then seek out the information from the several different sources identified. In requesting information and help from the sources he should specify what he needs.

CONTENT OUTLINE

A. It is necessary to specify the nature and purpose of desired information before seeking out sources.

B. Typical questions raised with regard to utilization of project management by administrators are usually concerned with the following areas:

   1. Need for specialized skills
   2. Training requirements
   3. Useful references
   4. Research available
   5. Applications in education
   6. Implementation procedures

C. Specific sources of information for project management can be obtained from the following:

   1. Annotated bibliography as indicated in lesson
   2. Agencies and institutions
      a. Far West Regional Educational Laboratory
      b. Research for Better Schools, Inc.

c. Center for Advanced Study of Educational Administration

d. University Council on Educational Administration

e. National Academy for School Executives

f. Educational Program Management Center

g. Project Management Institute

3. ERIC system

4. Journals and professional publications

5. Educational Project Management Instructional System--Basic Principles and Techniques Module

6. Colleges and universities

7. State education agencies

8. American Management Association

D. It is important to specify requests and questions in seeking information.

1. It saves time.

2. It helps to obtain the desired information.

Turn the page and proceed

Lesson 4--Securing More Information

Instructions

1. *Set up the recorder, projector, and screen.*
2. *Place the carousel slide tray for this lesson onto the projector and advance the tray to the start of Executive Orientation--Lesson Four.*
3. *Place the cassette tape for this lesson into the recorder and rewind to the rewind stop.*
4. *Start the recorder and advance the slides with the "change tone."*

Lesson 4--Securing More Information

Lesson Text

Introduction

The overall objective of this module has been to provide you with an orientation to the project management concept and its potential for use in local school district settings. No attempt was made to provide you with a complete set of skills. Instead the package is designed to provide perspective rather than to give you a prescription. You might well now ask: Where can I go to get more information about project management? Who can give me help? What agencies might be of value?

Before presenting some possible sources of additional information, it is necessary to focus your attention on the type of information you want and why you want it. For example, do you want to know about project planning specifically, or do you want to know about organizational theory in general? Listed below are some of the specific questions that have commonly been asked by educational administrators once they have been introduced to the project management concept.

- o Do I need to employ specialized personnel, or can my present staff develop the necessary skills?
- o What, and how much, training in specific project management skills is needed by personnel who desire to employ the technique?
- o What are some good reference texts and handbooks I can read on this topic or put in the district's professional library?
- o What research has been done on the role and value of project management, and what have been the results?
- o What school districts like mine have applied the concept, and what success have they had?
- o How do I go about implementing the concept in my school district?

Perhaps you have asked one or more of the above questions. It is not

possible to fully answer such questions in this lesson, since some of the answers are just not available in detail and others are too long and complex to include. However, possible sources of information regarding these and other similar questions are listed in the EPMIS Module Manual accompanying this notebook. Other sources are described below.

Information Sources

If you desire to read more about project management or have additional reference documents, an annotated bibliography has been included as part of the accompanying EPMIS Module Manual. Many professional education and management journals contain articles reporting on aspects of project management. Among the more popular journals known to have articles are:

- o Phi Delta Kappan
- o School Management
- o Educational Administration Quarterly
- o Management Science

One good source of research information is ERIC Research in Education issued by the U. S. Office of Education. This report lists research papers, position papers, final project reports, and descriptions of new projects. Entries in the ERIC Research in Education issues are categorized by project, author and subject in order to help you locate possible items of value.

There are many agencies and offices which can provide assistance. Some are identified below. Specific addresses for the several agencies noted are included as part of this manual.

Research for Better Schools, Inc., a regional education laboratory located in Philadelphia, through their Administering for Change Program, is

engaged in a major effort to design and develop individualized/self-study materials which will assist local school districts to improve their knowledge and skills in educational project management. The EPMIS materials are a significant part of this developmental effort.

The University Council on Educational Administration at The Ohio State University, a consortium of many large and small colleges, focuses some of its efforts on management applications in education.

The National Academy for School Executives, located in Washington, D.C., provides training, reference materials and consultive services.

The Educational Program Management Center at the Ohio State University specializes in the application of project management concepts to education. This center offers consultive services and conducts training courses and research.

The Project Management Institute, a non-profit organization located in Philadelphia, was founded in 1969 as a vehicle for promoting interest in, and research on, the project management concept.

If training in the basic principles and techniques of project management is desired, such instructional materials can be obtained from Research for Better Schools, the same source from which you obtained EPMIS Executive Orientation.

Many colleges and universities offer training through regular and short-term courses in Business Administration, Educational Administration, and Industrial Engineering departments, as well as consultive services and basic reference materials.

Many state departments of education, through their offices of research, planning and evaluation, can often provide knowledge and consultive help.

The American Management Association and similar professional groups offer books and related materials on general management. Short courses are offered frequently at convenient locations around the country.

Private consulting firms in both education and business can provide assistance in the areas of skill development, knowledge, and technical assistance.

Summary

There are many available sources from which to secure additional information about project management. The search for such information requires, however, that you specify the information you are seeking or the question you want answered, and that you try several sources, since one source is not likely to have all the answers.

Turn the page and read the directions for the discussion questions.

Lesson 4--Securing More Information

Discussion Questions

Directions: Given below are a series of discussion questions. They may be used in any of the following ways. It is suggested that you allow approximately 10 minutes for each question.

1. *The student working independently is to contemplate the discussion questions and write down an outline of the answer.*
2. *A group of students who have completed the lesson should select a discussion leader, discuss the questions, and try to obtain concensus of opinion on the question.*
3. *A leader and group of students after completing the lesson, will pursue the discussion topics attempting to obtain consensus of opinion on the questions.*

1. What are some of the questions about project management that you might seek information to answer?
2. If you have decided that a project management capability is needed in your school system, what do you think are the first steps to establish the capability?
3. What are the pros and cons of contracting with an outside agency to establish a project management capability in a school system?

Directions: After you have finished consideration of the questions above, please turn the page and complete the Lesson Quality Control Form.

Module 1
Lesson 4

Lesson 4--Securing More Information

Lesson Quality Control Form

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Thank you for your assistance.

1. Indicate your overall impression of the quality of this lesson.

☐ Excellent ☐ Very Good ☐ Good ☐ Fair ☐ Poor

2. What do you feel is the most positive aspect of this lesson?

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Turn the page and proceed

Lesson 4--Securing More Information

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This lesson on securing more information is now completed. It is the last lesson in Module 1--Executive Orientation of the Educational Project Management Instructional System. Please turn to page 15 of the Module Manual and complete the Module 1 Post-Test.